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Survey of Occupational Noise Exposure in CF Personnel in Selected High-Risk Trades

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Abstract

This noise survey assessed noise exposure sustained by persons in various military trades at three Canadian Forces Bases (CFB) in Ontario (Petawawa, Borden and Trenton). It is part of a larger project that will involve the assessment of audiograms obtained from personnel at the bases to assess the effects of cumulative noise exposure on hearing acuity. Participants were asked to wear personal noise dosimeters over one full work shift. In total 258 dosimeter measurements of military personnel belonging to 36 different Military Occupations were collected.

Résumé

Le présent relevé de bruit permet d'évaluer l'exposition reçue par des personnes oeuvrant dans différents secteurs militaires de trois bases des Forces canadiennes (BFC) en Ontario (Petawawa, Borden et Trenton). Il fait partie d'un projet plus vaste ayant pour but d'évaluer des audiogrammes obtenus auprès du personnel des bases afin d'étudier les effets des expositions au bruit cumulatives sur l'acuité auditive. On a demandé aux participants de porter des sonomètres intégrateurs personnels pendant un quart de travail complet. Au total, 258 mesures prises par les dosimètres utilisés par le personnel militaire appartenant à 36 groupes professionnels militaires différents ont été retenues.

Executive Summary

This noise survey assessed noise exposure sustained by persons in various military trades at three Canadian Forces Bases (CFB) in Ontario (Petawawa, Borden and Trenton). It is part of a larger project that will involve the assessment of audiograms obtained from personnel at the bases to assess the effects of cumulative noise exposure on hearing acuity.

Participants were asked to wear personal noise dosimeters over one full work shift. The intent was to monitor at least eleven persons in each trade with at least 25 individuals working in the trade. In total 258 dosimeter measurements of military personnel belonging to 36 different Military Occupations were collected. For each measurement the peak, maximum level, minimum level, average sound level, time weighted average, dose, projected 8-hour dose, and upper limit time were measured for three different parameter settings using Quest model Q-300 dosimeters.

The MOCs with all or almost all of the measures being the 12 loudest are probably at the greatest risk of noise induced hearing loss. These MOCs were: MOC 011 (Armoured Soldier), MOC 021 (Artillery Soldier – Field), MOC 041 (Field Engineer), MOC 131 (Search and Rescue Technician), MOC 22A (Artillery Officer), MOC 31D (Air Navigator – Transport), MOC 32A (Pilot), and MOC 411 (Vehicle Technician). However, MOCs not listed as the greatest risk of noise induced hearing loss may still cause significant hearing loss.

This dosimeter survey as well as the audiograms collected as part of the larger study may help to determine where hearing conservation resources need to be focused.

Sommaire

Le présent relevé de bruit permet d'évaluer l'exposition reçue par des personnes oeuvrant dans différents secteurs militaires de trois bases des Forces canadiennes (BFC) en Ontario (Petawawa, Borden et Trenton). Il fait partie d'un projet plus vaste ayant pour but d'évaluer des audiogrammes obtenus auprès du personnel des bases afin d'étudier les effets des expositions au bruit cumulatives sur l'acuité auditive.

On a demandé aux participants de porter des sonomètres intégrateurs personnels pendant un quart de travail complet. Le but visé était de contrôler l'exposition au bruit d'au moins 25 personnes qui travaillent dans un groupe professionnel militaire donné. Au total, 258 mesures prises par les dosimètres utilisés par du personnel militaire appartenant à 36 groupes professionnels militaires différents ont été retenues. Pour chaque mesure, on a noté le pic, le niveau maximal, le niveau minimal, le niveau sonore moyen, la moyenne pondérée en fonction du temps, la dose, la dose prévue pour une durée de 8 heures et la limite de temps supérieure pour trois réglages de paramètres différents à l'aide de dosimètres de modèle Q-300 de Quest.

Les GPM pour lesquels toutes les mesures, ou presque toutes les mesures comptent parmi les 12 bruits les plus intenses sont probablement ceux qui sont exposés au plus grand risque de perte auditive induite par le bruit. Ces GPM sont GPM 011 (Soldat de l'arme blindée), GPM 021 (Artilleur de campagne), GPM 041 (Sapeur), GPM 131 (Technicien en recherche et sauvetage), GPM 22A (Officier d'artillerie), GPM 31D (Navigateur aérien – Transport), GPM 32A (Pilote) et GPM 411 (Technicien de véhicule). Cependant, même les GPM qui ne figurent pas dans cette liste peuvent subir des pertes auditives importantes.

Les contrôles, effectués à l'aide de dosimètres, ainsi que la consultation des audiogrammes recueillis dans le cadre de cette vaste étude peuvent aider à déterminer les domaines où les ressources de protection de l'ouïe doivent être concentrées.

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1 Background

This noise survey was conducted to assess noise exposure sustained by persons in various military trades at three Canadian Forces Bases (CFB) in Ontario (Petawawa, Borden and Trenton). It is part of a larger project that will involve the assessment of audiograms obtained from personnel at the bases to assess the effects of cumulative noise exposure on hearing acuity.

Approximately 28 million people in the United States are afflicted with hearing loss, with about 10 million of these impairments partially attributable to damage from exposure to loud noise (NIH, 1990). According to Statistics Canada, 2.9 million Canadians – one in every ten citizens – suffer some form of noise-induced hearing loss. In 2000, Ontario's Workplace Safety & Insurance Board (WSIB) paid out more than $20 million in hearing-loss benefits to some 2,500 claimants (OFSWA, 2001).

This noise survey is intended to form part of a larger comprehensive investigation of the current prevalence and the development of noise-induced hearing loss in Canadian Forces (CF) personnel. This target population offers the opportunity to sample relatively large numbers of work-aged men and women (18-55 years) employed in a broad range of trades.

2 Aim

The aim of this noise survey is to assess the noise exposure associated with various military trades at three Canadian Force Bases in Ontario (Petawawa, Borden and Trenton).

3 Method

About 159 different military trades are represented at CFB Petawawa, CFB Borden and CFB Trenton. This study targeted those trades employing at least 25 individuals across the three bases, with emphasis given to trades considered as posing a relatively high risk of hearing loss. DRDC coordinated with the bases, researched the demographics of each base, prioritized the trades to be monitored, and determined the number of individuals within each trade to participate in the survey. The intent was to monitor at least eleven persons in each trade with at least 25 individuals working in the trade. Participants were asked to wear personal noise dosimeters over one full work shift. Dosimetry was selected in preference to noise level measurements, so as to gain a realistic appraisal of individual cumulative noise exposure, either within or in excess of safe levels (i.e. $LA_{eq}8$=87 dBA) over a typical 8-hour work shift.

Data was collected at CFB Petawawa in November and December of 2002, CFB Borden in February of 2003, and CFB Trenton in May of 2003.

3.1 Equipment

The equipment used in this survey included twelve Q-300 dosimeters, a calibrator and QuestSuite software. A brief description of each is below.

3.1.1 Dosimeters

Eleven Quest model Q-300 dosimeters (plus one spare) were used (Figure 1). The Q-300 dosimeter is a datalogging personal noise dosimeter and integrating sound level meter in one package. The unit calculates, displays and stores sound pressure levels, max and min levels, peak levels, averages (Leq or Lavg), time weighted averages, sound exposure levels, dose and projected dose, and exposure in Pascal squared hours. Time histories for average levels, max and peak, plus statistical tables are readily available for printout. The Q-300 performs the calculations for three dosimeters operating simultaneously in one instrument.

Technical specifications of the Q-300 dosimeter are:

Measuring Range	40 to 110 dB, 70 to 140 dB
Frequency Weighting	A, C
Exchange Rate	3, 4, 5, 6 dB, user selectable
Standards	ANSI S1.25, S1.4, IEC 651, 804, 1252
Power	9V battery, 48 hours operation
Dimensions (HWD)	5.5" x 2.8" x 1.4"
Weight	15.5 oz

Figure 1: Quest Model Q-300 Dosimeter

3.1.2 Calibrator

QC-20 sound level calibrator provides quick, precise field calibration of the dosimeter (Figure 2). The calibrator generates a stable acoustic signal at a controlled frequency and amplitude to verify the accuracy of a meter in the field. With the QC-20 sound level calibrator the user can select one of two levels (94 dB or 114 dB) and one of two frequencies (250 Hz or 1,000 Hz) to generate four different possible outputs. For this survey the calibrator was set at 114 dB and 1,000 Hz. It has a standard one-inch coupler opening that may be reduced by inserting available snap-in adapters.

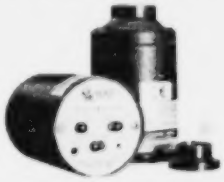

Figure 2: QC-20 Sound Level Calibrator

3.1.3 QuestSuite™ for Windows Data Analysis Software.

QuestSuite software downloads data from the dosimeters and stores, archives, and organizes it in a data file on the computer. It provides search criteria to assess the data. It has graphic tools to help analyse the data in 2D, 3D, bar charts and line graphs (Figure 3). The dosimeter parameters were uploaded from the QuestSuite software. QuestSuite software ran on a Dell Latitude C600 laptop during this survey.

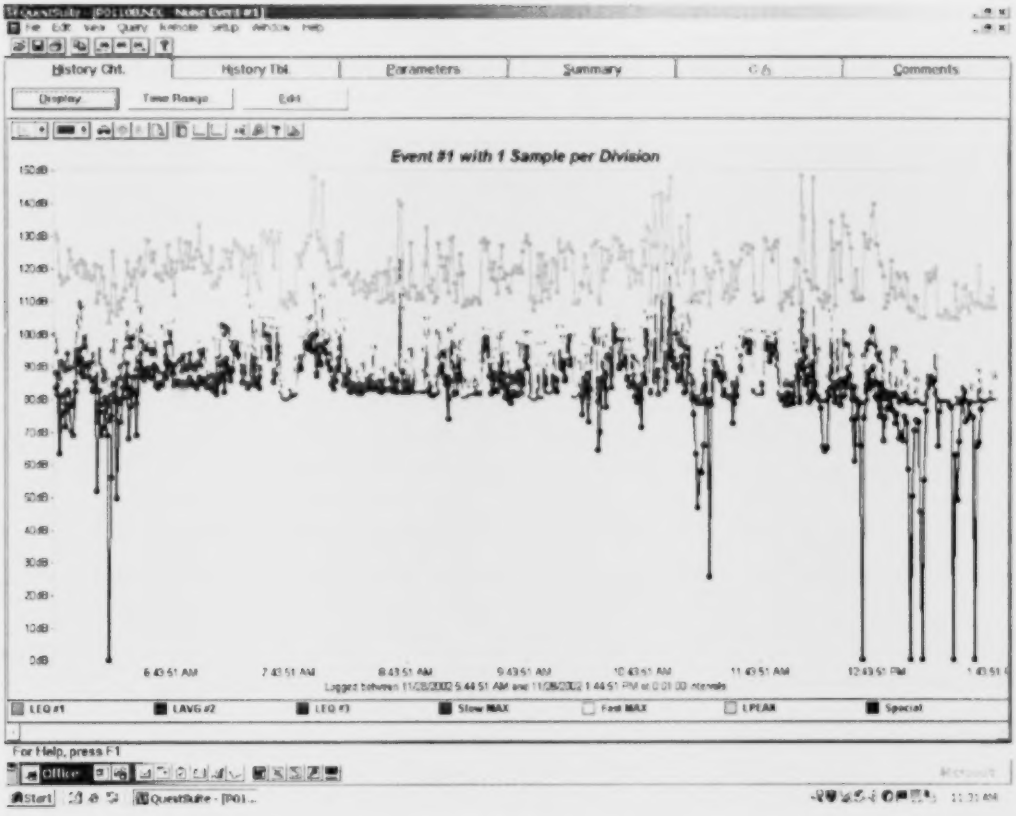

Figure 3: Screen Capture of a Graph in QuestSuite Software

3.2 Procedure

A parameter file was downloaded onto each dosimeter on the evening prior to each day of data collection. The calibration of each dosimeter was checked. The microphone windscreen was taped to the microphone without covering the top of the microphone. This was to help prevent the loss of the windscreen during data collection.

Up to eleven individuals participated in this survey each day of the study. They met with the experimenter one hour before the start of the work shift. Each participant filled out a Volunteer Consent Form. The participants were read the instructions, created by DRDC, by the experimenter (Appendix A). The participants were asked to fill out the Activity Questionnaire (Appendix B) designed by DRDC to the best of their knowledge. The experimenter helped the participants attach the dosimeter to their clothing. The dosimeter's microphone was attached by their left ear by clipping it to their collar or epaulet (Figure 4). The wire from the microphone was fed under the participants clothing to prevent it from snagging and the dosimeter was clipped to their belt or placed in a pocket. The participants were asked to return the dosimeter to the experimenter at the end of their workday. The experimenter answered any questions or concerns that the participants

had. Upon returning the dosimeters the participants were asked to finish filling out their Activity Questionnaire describing the tasks they performed and equipment used that day.

Figure 4: Microphone Clipped on the Left Epaulet

Once all the dosimeters were collected the experimenter downloaded the data onto the laptop and prepared the dosimeters for the next day of data collection.

3.3 Measures

Each dosimeter was configured with a logging interval of one minute, meter range of 70-140 dB and, a projected period of eight hours. The Q-300 performed calculations for three dosimeters operating simultaneously in the one instrument. The parameters of the three dosimeters within each Q-300 instrument are presented in Table 1. The dosimeter parameters were determined by DRDC.

	Dosimeter 1	Dosimeter 2	Dosimeter 3
Weighting	A	A	A
Threshold	70dB	80dB	70dB
Exchange Rate	3dB	5dB	3dB
Criterion	87dB	90dB	85dB
Time Constant	Slow	Slow	Slow
Upper Limit	87dB	120dB	140dB

Table 1: Dosimeter Parameters

The following measures from each of the three dosimeters were analyzed:

Peak: The absolute unweighted peak is the highest instantaneous sound pressure, in decibels, that occurred during the measurement period. This measurement was recorded once for all three dosimeter readings, within each instrument.

Maximum Level: The maximum level is the highest sound pressure level, in decibels, that occurred during the measurement period allowing for the response mode that the unit is set for. The unit was set for a slow response, which has a time constant of one second for all three dosimeter readings, within each instrument.

Minimum Level: The minimum level is lowest sound pressure level, in decibels, that occurred during the measurement period allowing for the response mode that the unit is set for. The unit was set for a slow response, which has a time constant of one second, for all three dosimeter readings, within each instrument.

Average Sound Level (LAVG): The average sound level in decibels for the measurement period based on the exchange rate and thresholds set for each of the three dosimeter readings, within each instrument.

Time Weighted Average (TWA): The time weighted average is the sound level in decibels that is accumulated over the measurement period but with its average level computed over an eight hour time period.

Dose: Dose is a percentage of the maximum allowable noise that a worker can be exposed to per day based on criterion level, threshold, and exchange rate.

Projected 8-Hour Dose: Projected dose is calculated by assuming the average sound level measured during the measurement period and extrapolating to eight hours.

Upper Limit Time: The upper limit time is the total time that the sound level exceeds the upper limit set for each dosimeter.

3.4 Limitations

For occupations where individuals are required to wear headphones to receive communications, the dosimeter reading will not accurately reflect noise exposure at the ears. The attenuation ability of the headphones to block out ambient noise and the additional noise of the communications presented over the headphone to the individual's ears are not indicated in the noise measurements.

Noise measurements were only made on one to three different days for each MOC. The noise exposure may not have been typical for the MOC on the days selected.

Inaccurate measurements may occur if the participant's body shields the dosimeter microphone from the noise source. This may lower the readings that the dosimeter accumulates. This is particularly true for free field conditions (environments with little or no reflecting surfaces) and for highly directional noise sources (Giardino & Seiler, no date)

Localized noises such as loud talking, singing, or whistling very near to the microphone can cause erroneous readings in excess of 90dBA. Prolonged (1 second or more) scraping of the microphone against surrounding objects can also give high false readings (Giardino & Seiler, no date).

4 Results

4.1 Equipment Problems

Throughout the noise survey there were problems with downloading the data from the dosimeters. After unsuccessfully downloading the data at least twice from each dosimeter the battery was replaced and downloading of the data was tried again. In total, 32 measurements could not be downloaded. In 19 instances the Questsuite software had problems reading the file and was unable to communicate with the dosimeters in 3 instances. The screen of the dosimeter was frozen nine instances and the dosimeter would not turn off upon receipt from a participant at the end of the workday. The downloading problems were tracked throughout the survey to try to determine if specific dosimeters were defective. However, the downloading problems did not seem to be associated with a specific dosimeter.

4.2 Data Collected

The aim of the noise survey was to collect data on eleven subjects per day for fifteen days at each of the three bases, for a total of 495 measurements across 45 different MOCs. However, this was not possible because of the availability of the participants and the equipment problems described above. Also, some of the participants had to leave work early for various reasons. This resulted in measurements with a total exposure of less than six hours that were not included in the analysis.

In total 336 subjects participated in this survey. Of these measurements 300 were downloaded properly. However, 42 of the these measurements were less than six hours or the same individual was measured more than once[1] and thus were not included in the analysis. In total data from 258 subjects were included in the analysis presented in the next sections.

4.3 Participants

258 personnel with acceptable data participated in this noise survey. They represented 36 different military trades across three CF bases. Table 2 presents a list of the MOCs. These are described in Appendix. Of the 258 personnel 26 were civilians with the rest being CF personnel[2]. 225 were male and 33 were female. The mean age was 36±8.6 and the mean length of service was 14±8.9 years.

[1] The measurements for the loudest of the multiple exposures recorded were used in the analysis. The other measurements for that individual were removed from the analysis.

[2] For MOCs with few CF personnel available for the study, civilian personnel participated. The civilians' selected performed the same tasks as a CF member would for the associated MOC.

MOC	Title	CFB Petawawa	CFB Borden	CFB Trenton	Total
011	Armoured Soldier	5	0	0	**5**
021	Artillery Soldier (Field)	7	0	0	**7**
022	Artillery Soldier (Air Defence)	10	0	0	**10**
031	Infantry Soldier	13	0	0	**13**
041	Field Engineer	6	0	0	**6**
042	Field Engineer Equipment Operator	5	0	0	**5**
091	Flight Engineer	0	2	10	**12**
131	Search and Rescue Technician	0	0	8	**8**
169	Air Traffic Controller	0	0	6	**6**
170	Radar Controller	0	0	4	**4**
215	Signal Operator	0	2	10	**12**
21A	Armour Officer	3	0	0	**3**
226	Aerospace Telecommunications and Information Systems Technician	0	2	7	**9**
227	Land Communications and Information Systems Technician	0	4	0	**4**
22A	Artillery Officer	2	0	0	**2**
23	Infantry Officer	5	0	0	**5**
31D	Air Navigator (Transport)	0	0	6	**6**
32A	Pilot	0	0	9	**9**
39	Aerospace Control	0	0	7	**7**
411	Vehicle Technician	0	11	0	**11**
42	Communications and Electronics Engineer	0	0	2	**2**
421	Weapons Technician	0	3	0	**3**
434	Fire Control Systems Technician	0	1	0	**1**
441	Materials Technician	0	4	0	**4**
514	Aviation System Technician	0	1	8	**9**
526	Avionics Systems Technician	0	2	9	**11**
565	Aircraft Structures Technician	0	0	10	**10**
651	Fire Fighter	0	7	0	**7**
711	Medical Assistant	1	1	0	**2**
737	Medical Technician	6	6	0	**12**
83	Communication and Electronics Engineer	0	4	0	**4**
861	Cook	0	9	0	**9**
911	Supply Technician	0	7	0	**7**
921	Ammunition Technician	0	4	0	**4**
933	Traffic Technician	0	1	8	**9**
935	Mobile Support Equipment Operator	2	10	8	**20**
	Total	**65**	**81**	**112**	**258**

Table 2: Military Occupations Codes (MOC)

4.4 Measurements

The following measurements for each of the three dosimeters within each instrument are presented below: peak, maximum level, minimum level, average sound level (LAVG), time weighted average (TWA), dose, projected 8-hour dose, and upper limit time. Descriptive statistics, consisting of the median, mean, minimum, maximum and standard deviation for each of the measurements for each MOC across all three CF bases are in Appendix D. Each participants' data is presented in Appendix E, F, and G for dosimeters 1, 2 and 3 respectively. Appendix H presents each subjects' base, gender, age, handedness, rank, years of service, activities performed and equipment used during the dosimeter measurement.

4.4.1 Peak

The absolute unweighted peak is the highest instantaneous sound pressure, in decibels, that occurred during the measurement period. The measurement was recorded only once for each instrument. A box and whisker plot of the peaks of each MOC is presented in Figure 5. MOC 22A (Artillery Officer) and MOC 42 (Communications and Electronics Engineer) had the lowest mean peak of 139.8 dBA and MOC 21A (Armour Officer) had the highest mean peak at 159.4 dBA.

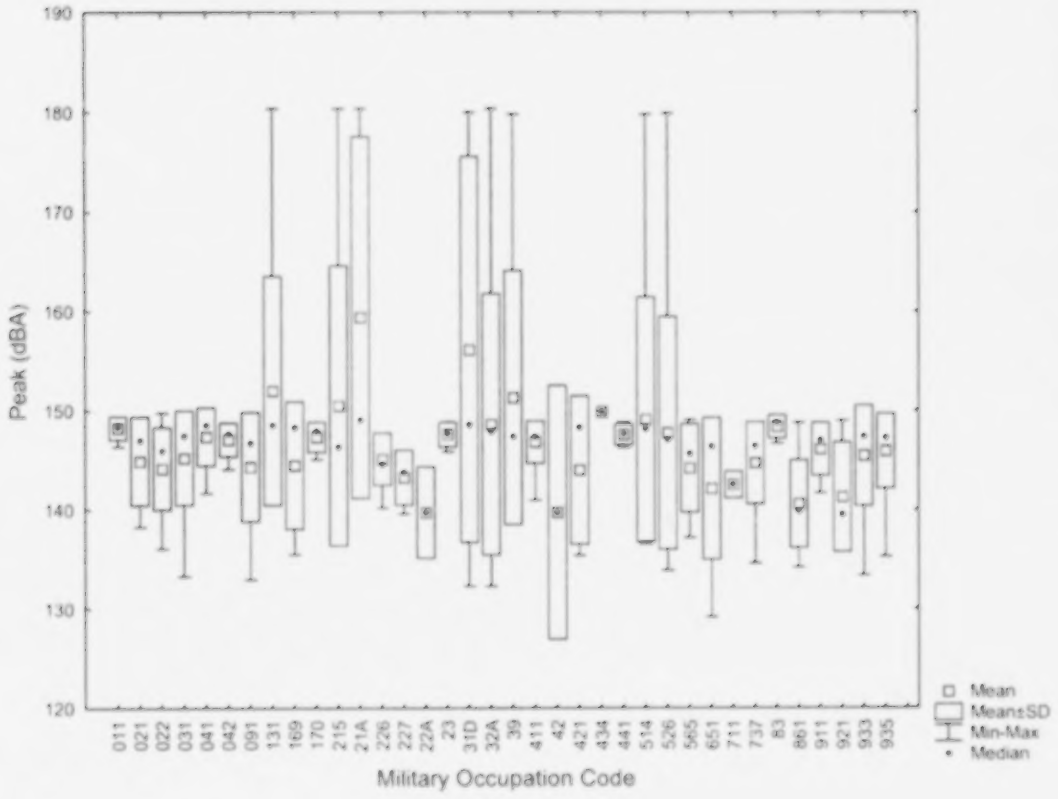

Figure 5: Peak (Highest Instantaneous Sound Pressure)

4.4.2 Maximum Sound Level

The maximum level is the highest sound pressure level with the dosimeter set for slow response. The measurement was the same for the three dosimeters within each instrument. A box and whisker plot of the maximum sound levels of each MOC is presented in Figure 6. MOC 711 (Medical Assitant) had the lowest mean maximum sound level at 106.6 dBA and MOC 041 (Field Engineer) had the highest mean maximum sound level at 131.6 dBA.

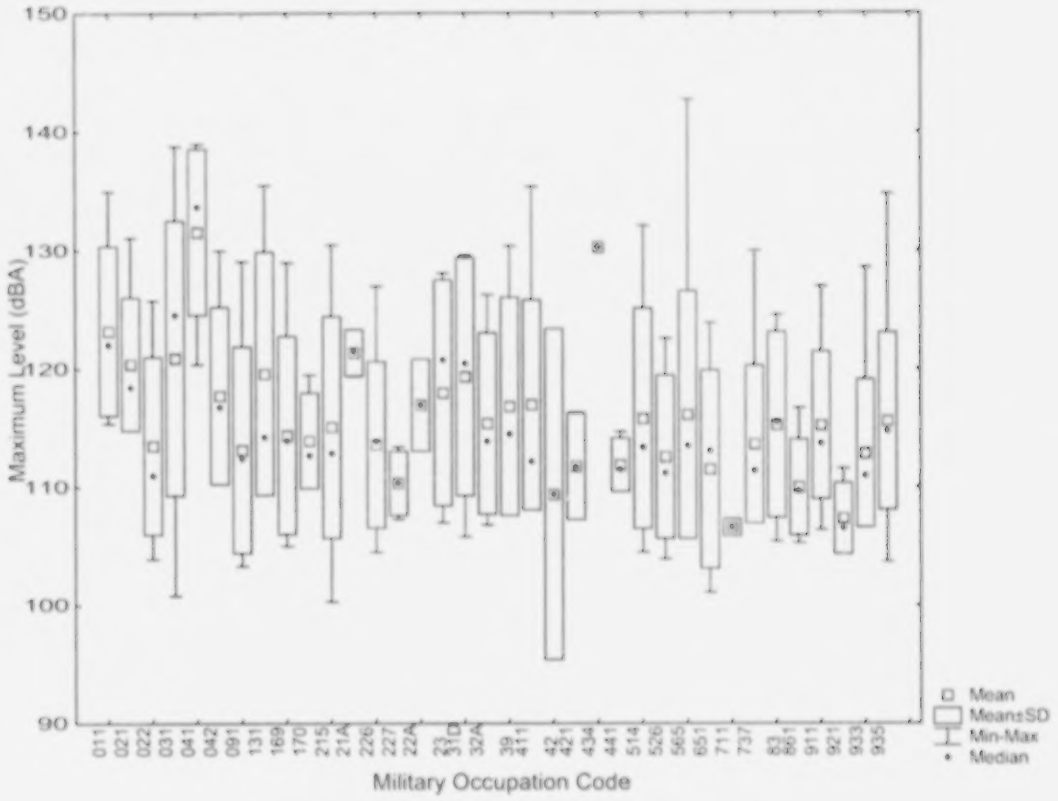

Figure 6: Maximum Sound Level

4.4.3 Minimum Sound Level

The minimum level is lowest sound pressure level with the dosimeter set for slow response. This measurement was the same for the three dosimeters within each instrument. The minimum sound level for all of the MOCs was 69.9 dBA.

4.4.4 Dosimeter One

4.4.4.1 Average Sound Level (LAVG)

The average sound level for dosimeter one was based on an exchange rate of 3dB and a threshold of 70 dB. A box and whisker plot of the LAVG of each MOC is presented in Figure 7. MOC 921 (Ammunition Technician) had the lowest mean LAVG of 75.8 dBA and MOC 021 (Artillery Soldier – Field) had the highest mean LAVG of 100.5.

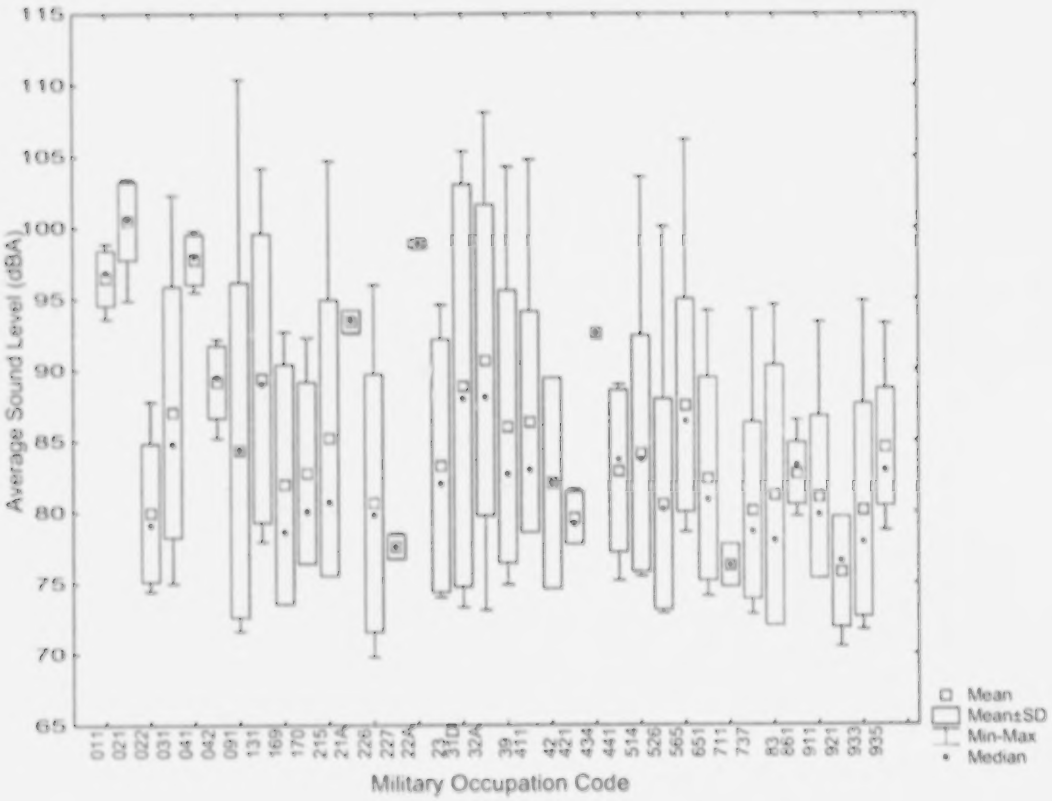

Figure 7: Dosimeter One - Average Sound Level

4.4.4.2 Time Weighted Average (TWA)

The time weighted average is the sound level in decibels that is accumulated over the measurement period but with its average level computed over an eight hour time period. A box and whisker plot of the TWA of each MOC is presented in Figure 8. MOC 711 (Medical Assistant) and MOC 921 (Ammunition Technician) has the lowest mean TWA of 75.7 dBA and MOC 021 (Artillery Soldier – Field) has the highest mean TWA of 100.6 dBA.

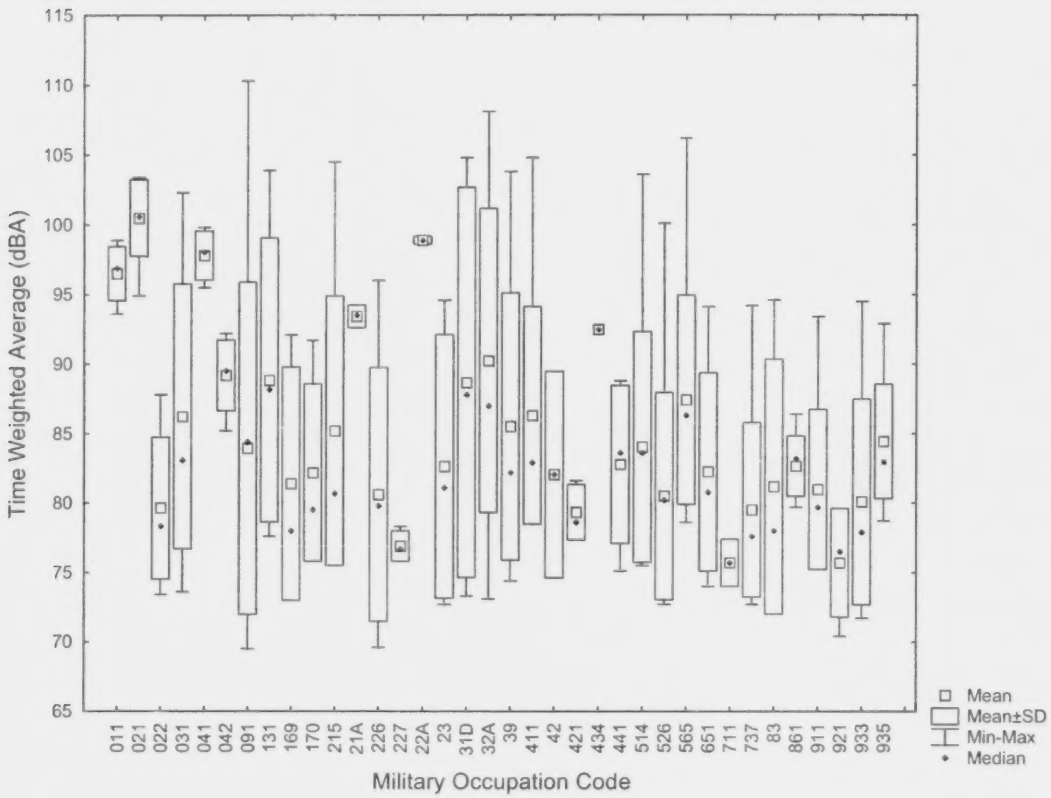

Figure 8: Dosimeter One - Time Weighted Average

4.4.4.3 Dose

Dose is a percentage of the maximum allowable noise that a worker can be exposed to per day based on criterion level, lower threshold, and exchange rate. For dosimeter one the criterion level was 87 dB, threshold was 70 dB, and the exchange rate was 3 dB. A box and whisker plot of dose of each MOC is presented in Figure 9. MOC 711 (Medical Assistant) has the minimum mean dose of 7.6% and MOC 021 (Artillery Soldier – Field) has the maximum mean dose or 2569.7 %.

The following MOCs had mean doses exceeding 100%: MOC 011 (Armoured Soldier), MOC 021 (Artillery Soldier – Field), MOC 031 (Infantry Soldier), MOC 041 (Field Engineer), MOC 042 (Field Engineer Equipment Operator), MOC 091 (Flight Engineer), MOC 131 (Search and Rescue Technician), MOC 169 (Air Traffic Controller), MOC 215 (Signal Operator), MOC 21A (Armour Officer), MOC 226 (Aerospace Telecommunications and Information Systems Technician), MOC 22A (Artillery Officer), MOC 23 (Infantry Officer), MOC 31D (Air Navigator – Transport), MOC 32A (Pilot), MOC 39 (Aerospace Control), MOC 411 (Vehicle Technician), MOC 434 (Fire Control Systems Technician), MOC 514 (Aviation System Technician), MOC 526 (Avionics

Systems Technician), MOC 565 (Aircraft Structures Technician), MOC 651 (Fire Fighter), and MOC 83 (Communication and Electronics Engineer).

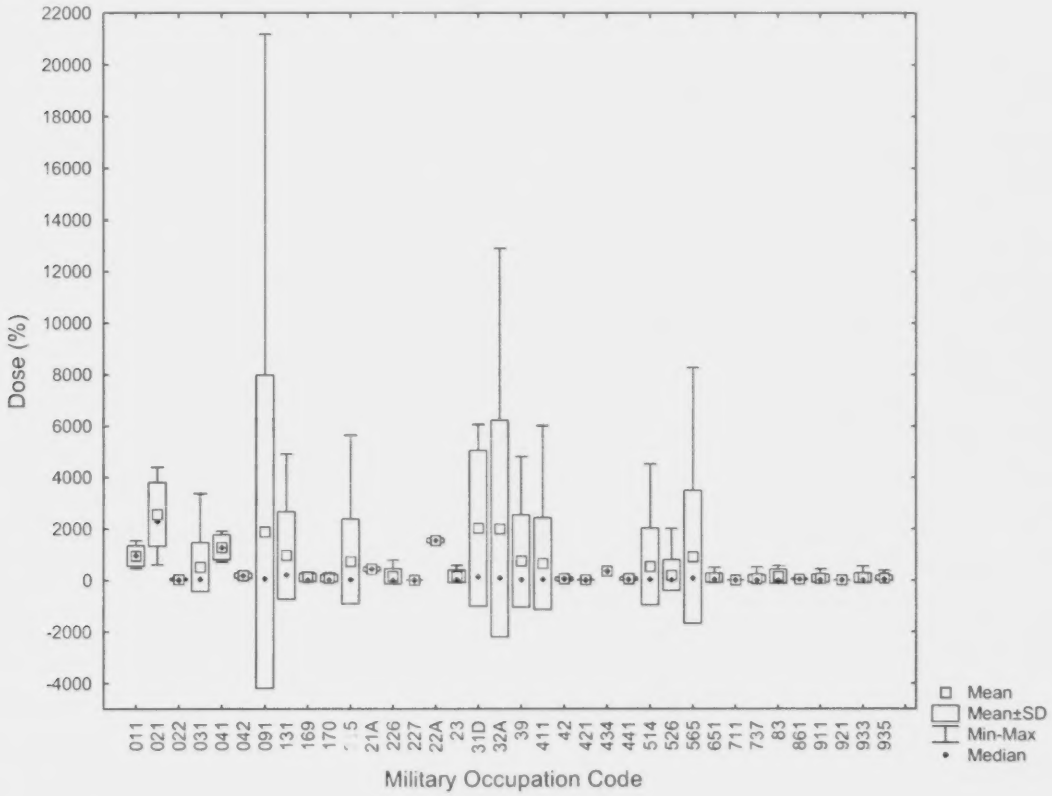

Figure 9: Dosimeter One - Dose

4.4.4.4 Projected 8-Hour Dose

Projected dose is calculated by assuming the average sound level measured during the measurement period and extrapolating to eight hours. A box and whisker plot of the projected 8-hour dose of each MOC for dosimeter one is presented in Figure 10. MOC 711 (Medical Assistant) has the lowest projected 8-hour dose of 8.6% and MOC 021 (Artillery Soldier – Field) has the highest projected 8-hour dose of 2569.7%.

The following MOCs had mean projected 8-hour doses exceeding 100%: MOC 011 (Armoured Soldier), MOC 021 (Artillery Soldier – Field), MOC 031 (Infantry Soldier), MOC 041 (Field Engineer), MOC 042 (Field Engineer Equipment Operator), MOC 091 (Flight Engineer), MOC 131 (Search and Rescue Technician), MOC 169 (Air Traffic Controller), MOC 215 (Signal Operator), MOC 21A (Armour Officer), MOC 226 (Aerospace Telecommunications and Information Systems Technician), MOC 22A (Artillery Officer), MOC 23 (Infantry Officer), MOC

31D (Air Navigator – Transport), MOC 32A (Pilot), MOC 39 (Aerospace Control), MOC 411 (Vehicle Technician), MOC 434 (Fire Control Systems Technician), MOC 514 (Aviation System Technician), MOC 526 (Avionics Systems Technician), MOC 565 (Aircraft Structures Technician), MOC 651 (Fire Fighter), and MOC 83 (Communication and Electronics Engineer).

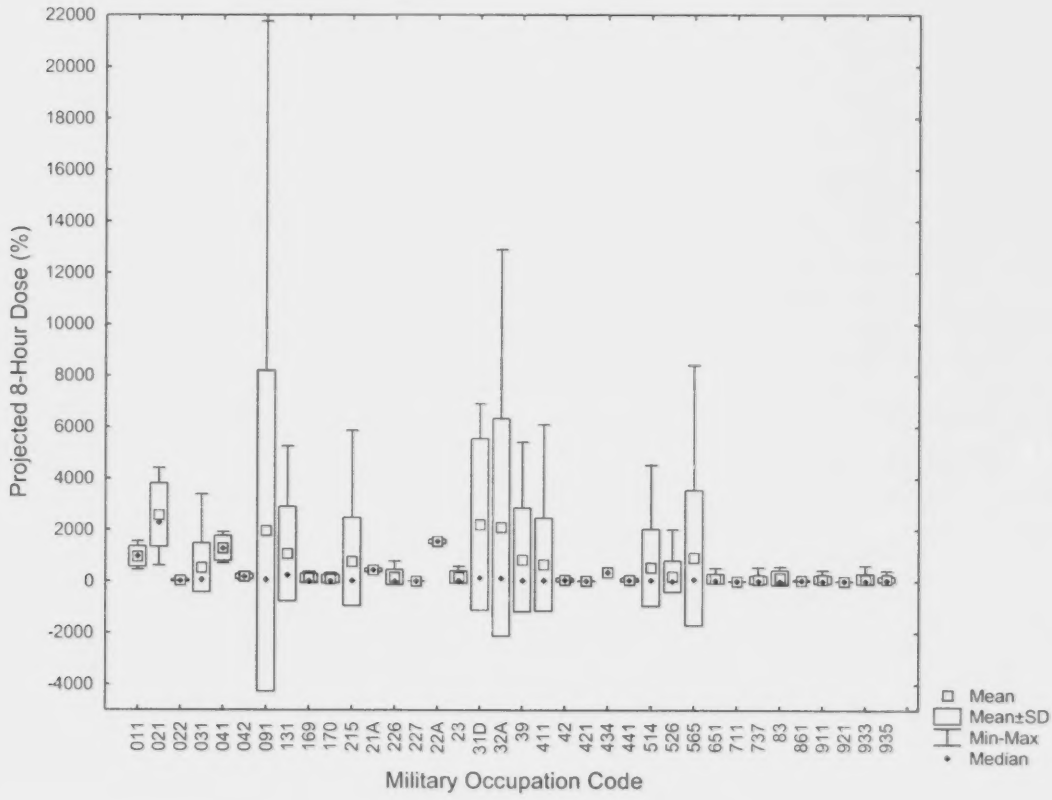

Figure 10: Dosimeter One - Projected 8-Hour Dose

4.4.4.5 Upper Limit Time

For dosimeter one the upper limit time is the total time that the sound level exceeds the upper limit of 87 dB. A box and whisker plot of the upper limit time of each MOC for dosimeter one is presented in Figure 11. MOC 711 (Medical Assistant) has the lowest upper limit time of 0.065 hours and MOC 011 (Armoured Soldier) has the highest upper limit time of 3.4 hours

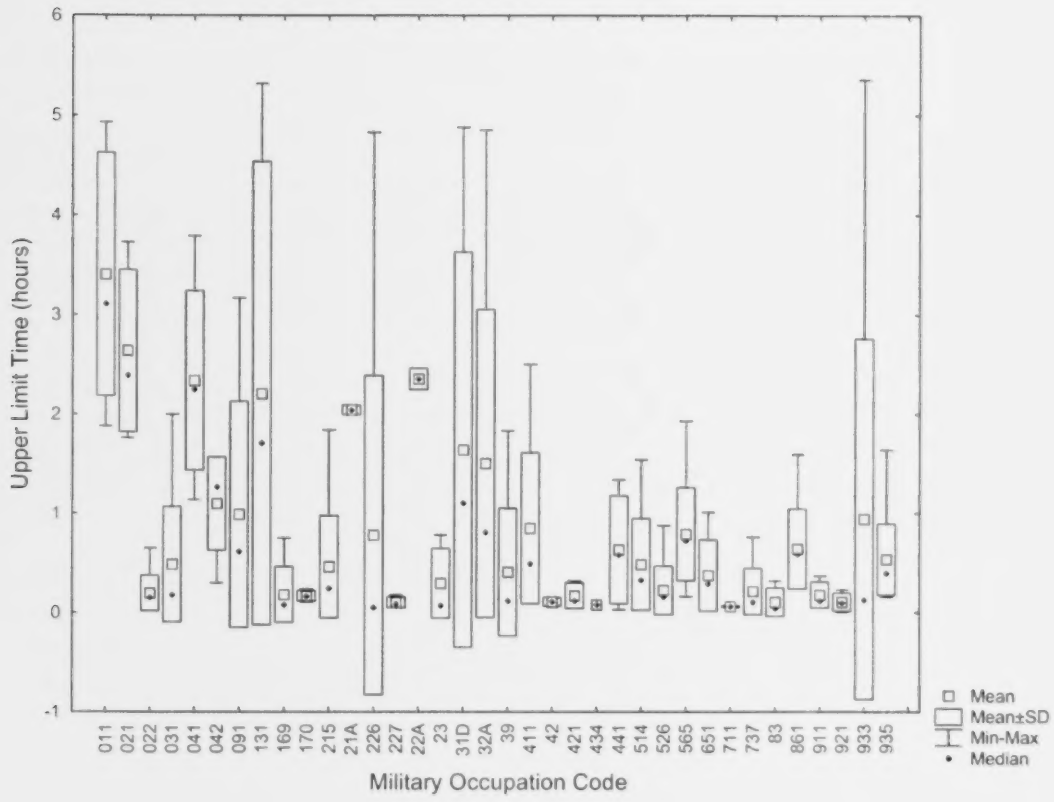

Figure 11: Dosimeter One - Upper Limit Time

4.4.5 Dosimeter Two

4.4.5.1 Average Sound Level

The average sound level for dosimeter two was based on an exchange rate of 5 dB and a threshold of 80 dB. A box and whisker plot of the LAVG of each MOC is presented in Figure 12. MOC 921 (Ammunition Technician) had the lowest mean LAVG of 64.8 dBA and MOC 021 (Artillery Soldier – Field) had the highest mean LAVG of 95.4 dBA.

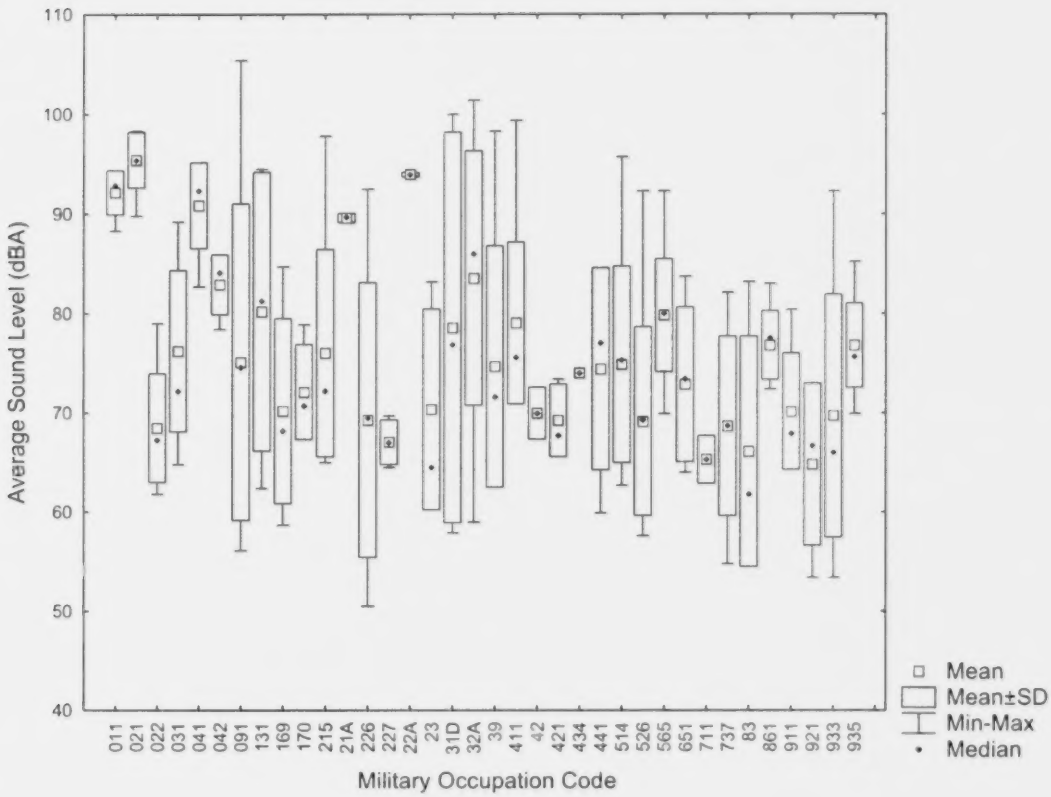

Figure 12: Dosimeter Two - Average Sound Level

4.4.5.2 Time Weighted Average (TWA)

The time weighted average (TWA) is the sound level in decibels that is accumulated over the measurement period but with its average level computed over an eight hour time period. A box and whisker plot of the TWA of each MOC for dosimeter two is presented in Figure 13. MOC 711 (Medical Assistant) has the lowest mean TWA of 64.3 dBA and MOC 021 (Artillery Soldier – Field) has the highest mean TWA of 95.4 dBA.

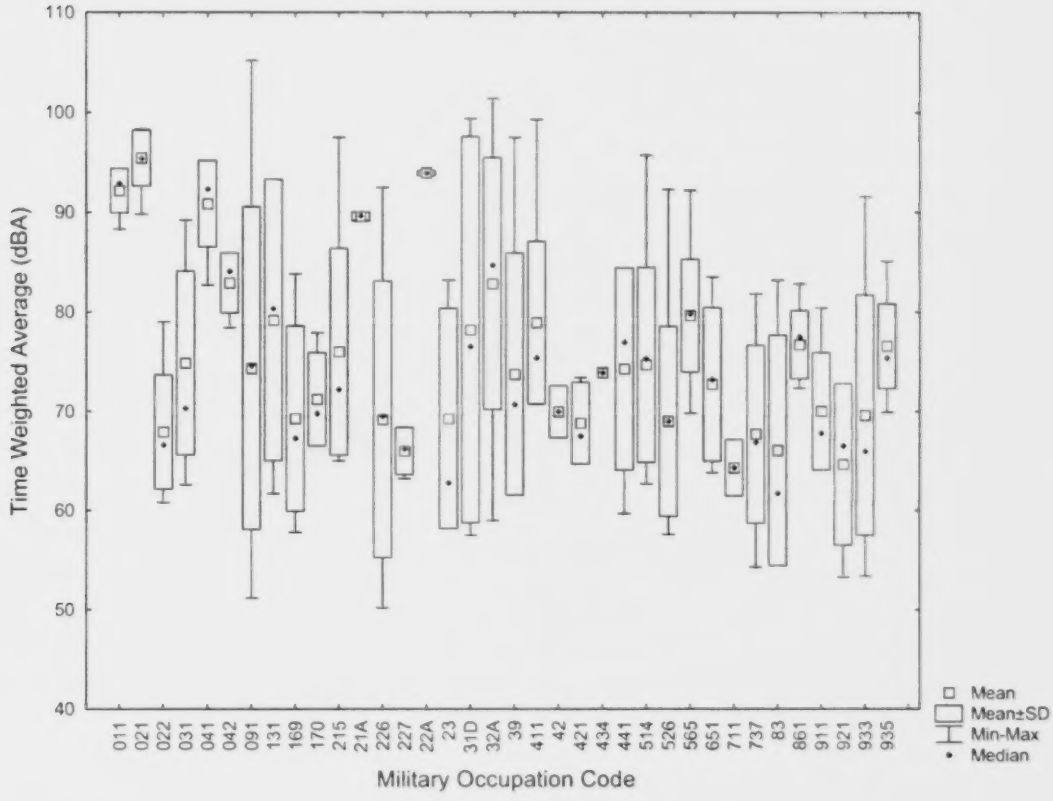

Figure 13: Dosimeter Two - Time Weighted Average

4.4.5.3 Dose

Dose is a percentage of the maximum allowable noise that a worker can be exposed to per day based on criterion level, lower threshold, and exchange rate. For dosimeter two the criterion level was 90 dB, lower threshold was 80 dB, and the exchange rate was 5 dB. A box and whisker plot of dose of each MOC is presented in Figure 14. MOC 711 (Medical Assistant) has the minimum mean dose of 3.0% and MOC 021 (Artillery Soldier – Field) has the maximum mean dose of 224.7%.

The following MOCs had mean doses exceeding 100%: MOC 011 (Armoured Soldier), MOC 021 (Artillery Soldier – Field), MOC 041 (Field Engineer), MOC 22A (Artillery Officer), MOC 31D (Air Navigator – Transport), and MOC 32A (Pilot).

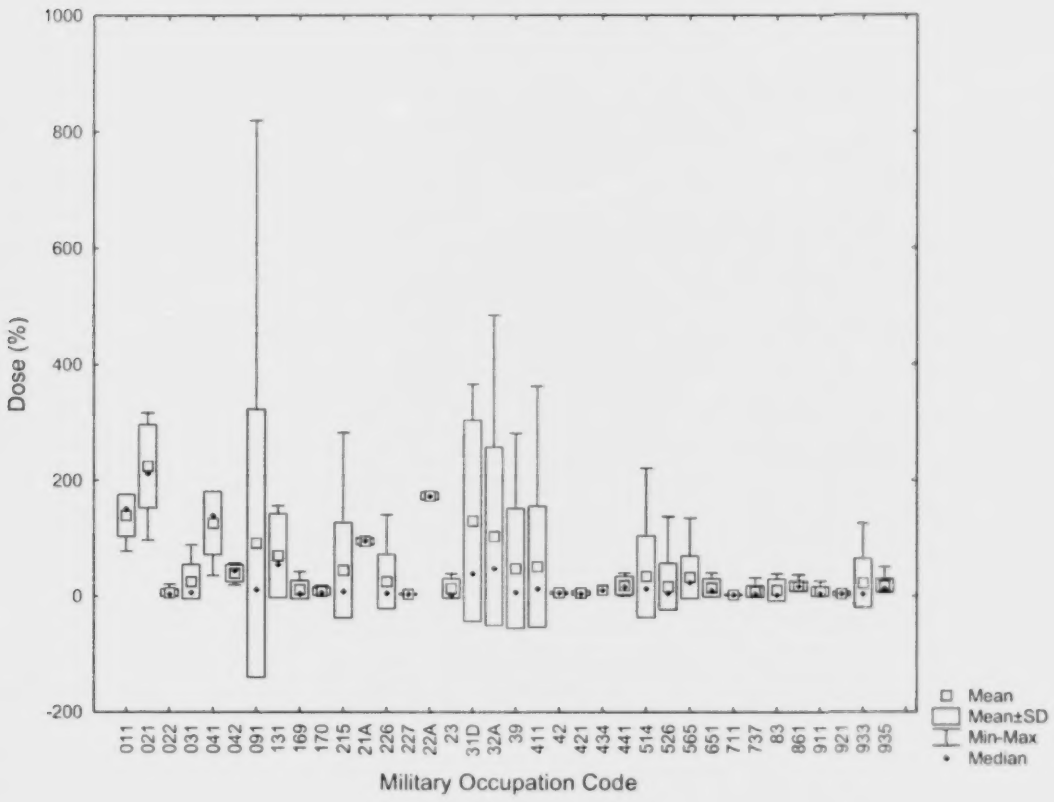

Figure 14: Dosimeter Two - Dose

4.4.5.4 Projected 8-Hour Dose

Projected dose is calculated by assuming the average sound level measured during the measurement period and extrapolating to eight hours. A box and whisker plot of the projected 8-hour dose of each MOC for dosimeter two is presented in Figure 15. MOC 711 (Medical Assistant) has the lowest projected 8-hour dose of 3.3% and MOC 021 (Artillery Soldier – Field) has the highest projected 8-hour dose of 224.6%.

The following MOCs had mean projected 8-hour doses exceeding 100%: MOC 011 (Armoured Soldier), MOC 021 (Artillery Soldier – Field), MOC 041 (Field Engineer), MOC 22A (Artillery Officer), MOC 31D (Air Navigator – Transport), and MOC 32A (Pilot).

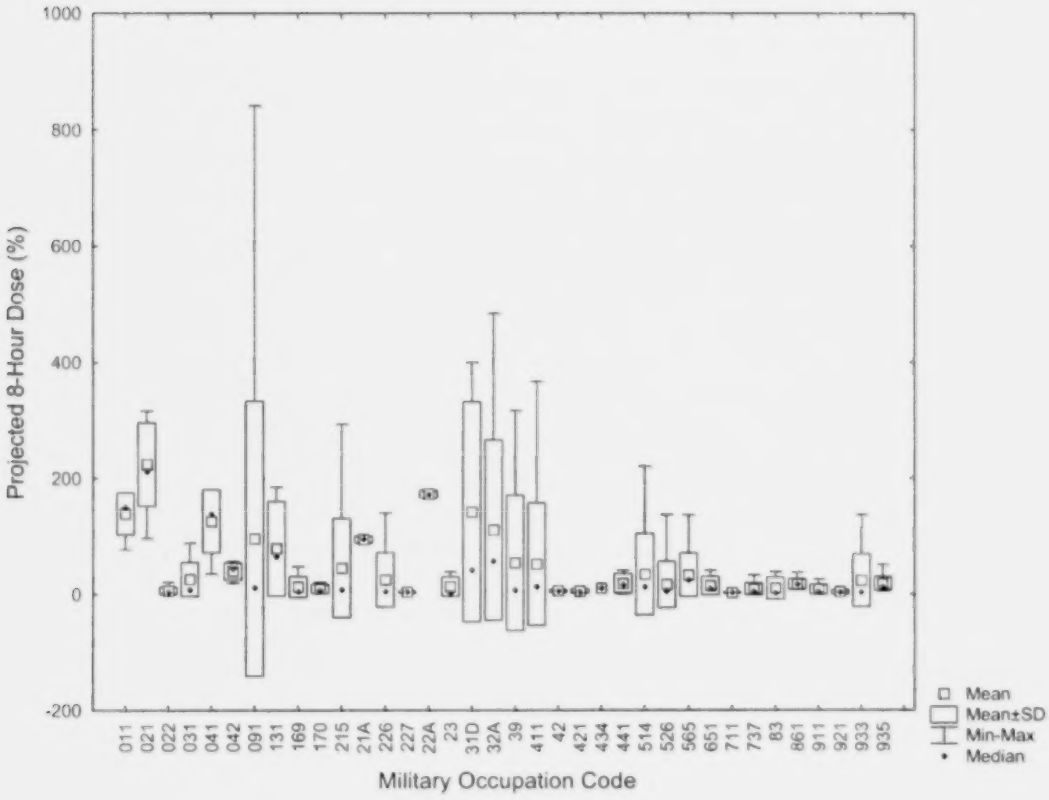

Figure 15: Dosimeter Two - Projected 8-Hour Dose

4.4.5.5 Upper Limit Time

For dosimeter two the upper limit time is the total time that the sound level exceeds the upper limit of 120 dB. A box and whisker plot of the upper limit time of each MOC for dosimeter two is presented in Figure 16. The mean upper limit times for all MOCs were zero or less than 0.01 hours.

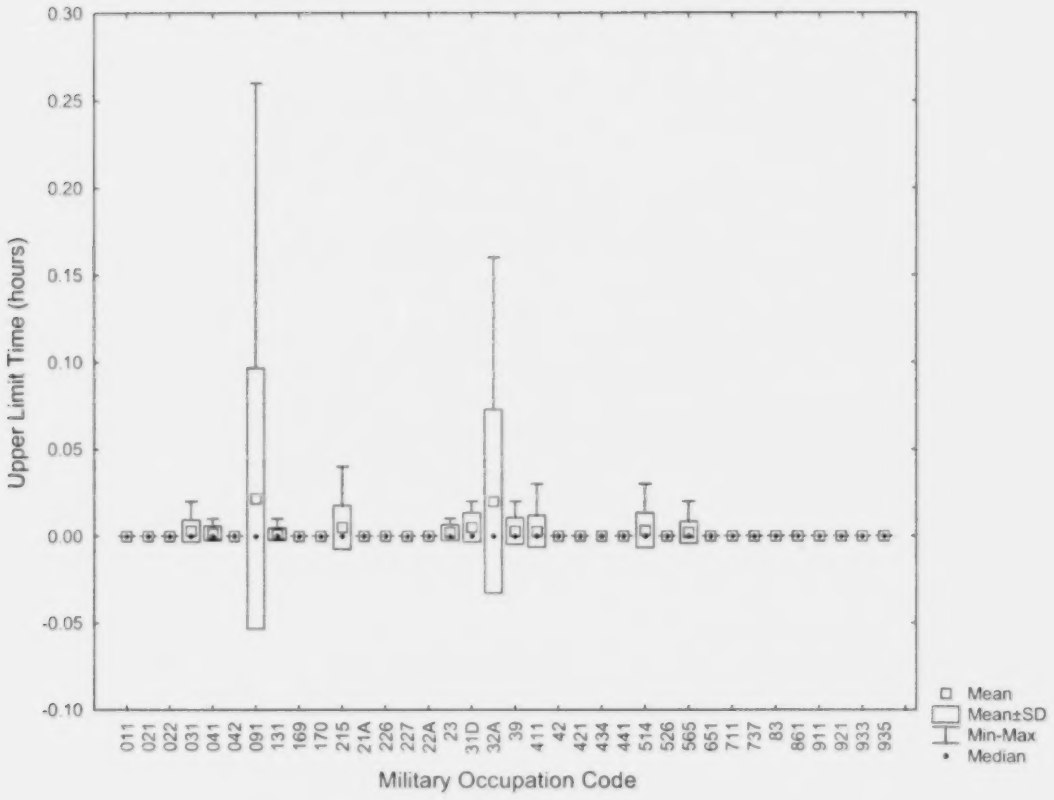

Figure 16: Dosimeter Two - Upper Limit Time

4.4.6 Dosimeter Three

4.4.6.1 Average Sound Level (LAVG)

The average sound level (LAVG) for dosimeter two was based on an exchange rate of 3 dB and a threshold of 70 dB. A box and whisker plot of the LAVG of each MOC is presented in Figure 17. MOC 921 (Ammunition Technician) had the lowest mean LAVG of 75.8 dBA and MOC 021 (Artillery Soldier – Field) had the highest mean LAVG of 100.5 dBA.

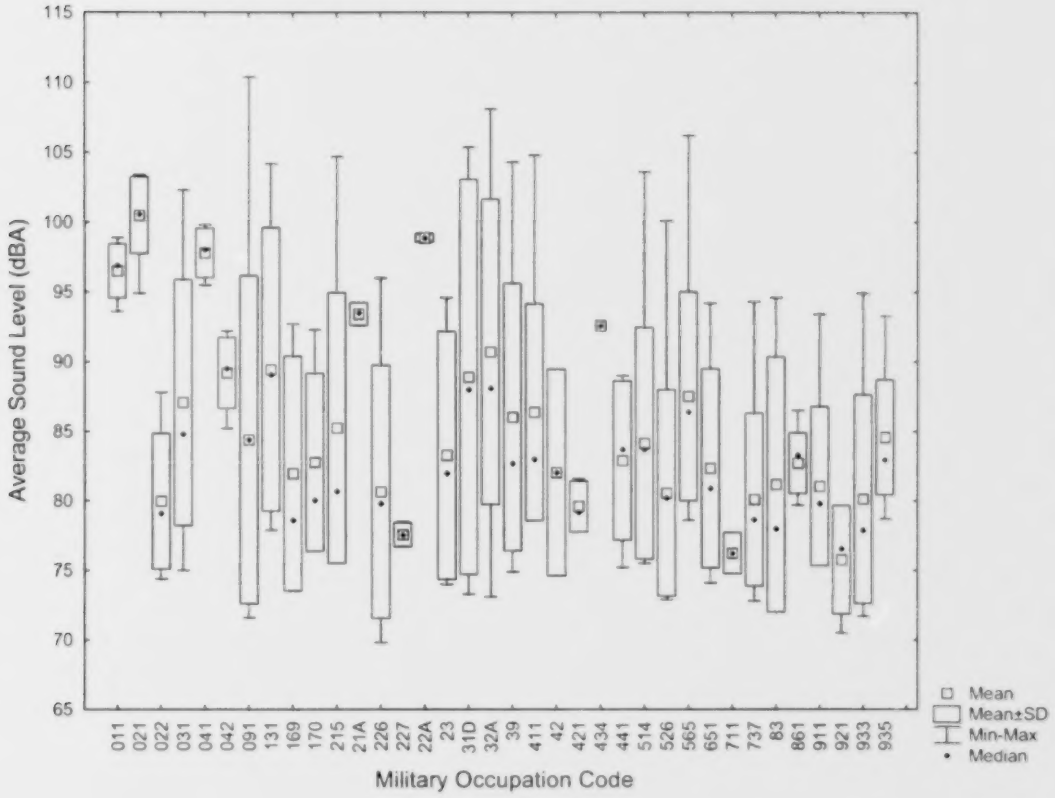

Figure 17: Dosimeter Three - Average Sound Level

4.4.6.2 Time Weighted Average

The time weighted average (TWA) is the sound level in decibels that is accumulated over the measurement period but with its average level computed over an eight hour time period. A box and whisker plot of the TWA of each MOC for dosimeter three is presented in Figure 18. MOC 711 (Medical Assitant) has the lowest mean TWA of 75.7 dBA and MOC 021 (Artillery Soldier – Field) has the highest mean TWA of 100.5 dBA.

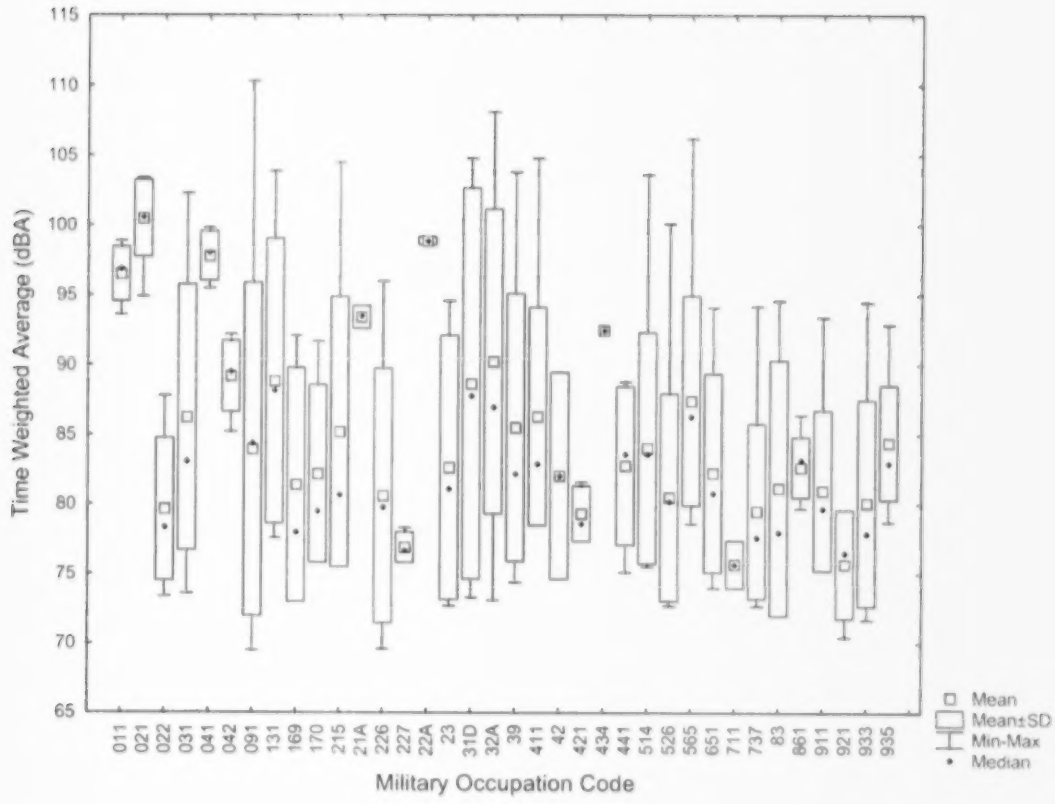

Figure 18: Dosimeter Three - Time Weighted Average

4.4.6.3 Dose

Dose is a percentage of the maximum allowable noise that a worker can be exposed to per day based on criterion level, lower threshold, and exchange rate. For dosimeter three the criterion level was 85 dB, lower threshold was 70 dB, and the exchange rate was 3 dB. A box and whisker plot of dose of each MOC is presented in Figure 19. MOC 711 (Medical Assistant) has the minimum mean dose of 12.1% and MOC 021 (Artillery Soldier – Field) has the maximum mean dose or 4073.0%.

The following MOCs had mean doses exceeding 100%: MOC 011 (Armoured Soldier), MOC 021 (Artillery Soldier – Field), MOC 031 (Infantry Soldier), MOC 041 (Field Engineer), MOC 042 (Field Engineer Equipment Operator), MOC 091 (Flight Engineer), MOC 131 (Search and Rescue Technician), MOC 169 (Air Traffic Controller), MOV 170 (Radar Controller), MOC 215 (Signal Operator), MOC 21A (Armour Officer), MOC 226 (Aerospace Telecommunications and Information Systems Technician), MOC 22A (Artillery Officer), MOC 23 (Infantry Officer), MOC 31D (Air Navigator – Transport), MOC 32A (Pilot), MOC 39 (Aerospace Control), MOC 411 (Vehicle Technician), MOC 434 (Fire Control Systems Technician), MOC 514 (Aviation System

Technician), MOC 526 (Avionics Systems Technician), MOC 565 (Aircraft Structures Technician), MOC 651 (Fire Fighter), MOC 737 (Medical Technician), MOC 83 (Communication and Electronics Engineer), MOC 911 (Supply Technician), MOC 933 (Traffic Technician),and MOC 935 (Mobile Support Equipment Operator).

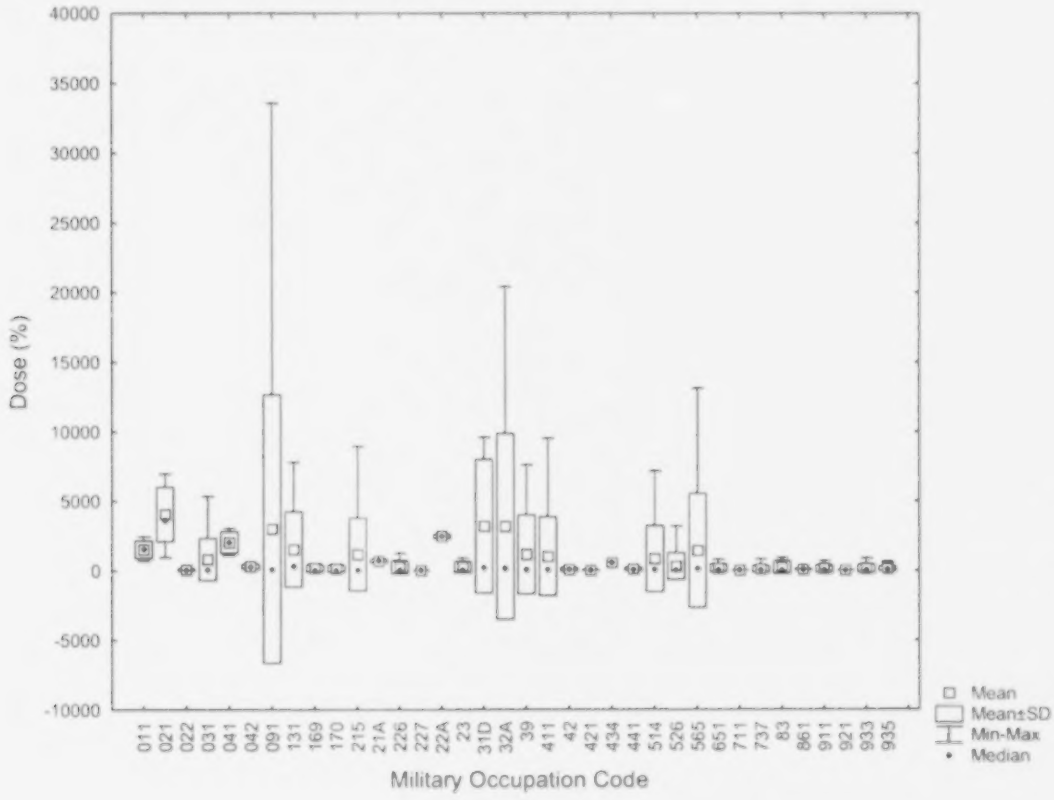

Figure 19: Dosimeter Three - Dose

4.4.6.4 Projected 8-Hour Dose

Projected dose is calculated by assuming the average sound level measured during the measurement period and extrapolating to eight hours. A box and whisker plot of the projected 8-hour dose of each MOC for dosimeter three is presented in Figure 20. MOC 711 (Medical Assistant) has the lowest projected 8-hour dose of 13.7% and MOC 021 (Artillery Soldier – Field) has the highest projected 8-hour dose of 4073.0%.

The following MOCs had mean projected 8-hour doses exceeding 100%: MOC 011 (Armoured Soldier), MOC 021 (Artillery Soldier – Field), MOC 031 (Infantry Soldier), MOC 041 (Field Engineer), MOC 042 (Field Engineer Equipment Operator), MOC 091 (Flight Engineer), MOC 131 (Search and Rescue Technician), MOC 169 (Air Traffic Controller), MOV 170 (Radar

Controller), MOC 215 (Signal Operator), MOC 21A (Armour Officer), MOC 226 (Aerospace Telecommunications and Information Systems Technician), MOC 22A (Artillery Officer), MOC 23 (Infantry Officer), MOC 31D (Air Navigator – Transport), MOC 32A (Pilot), MOC 39 (Aerospace Control), MOC 411 (Vehicle Technician), MOC 434 (Fire Control Systems Technician), MOC 441 (Material Technician), MOC 514 (Aviation System Technician), MOC 526 (Avionics Systems Technician), MOC 565 (Aircraft Structures Technician), MOC 651 (Fire Fighter), MOC 737 (Medical Technician), MOC 83 (Communication and Electronics Engineer), MOC 911 (Supply Technician), MOC 933 (Traffic Technician),and MOC 935 (Mobile Support Equipment Operator).

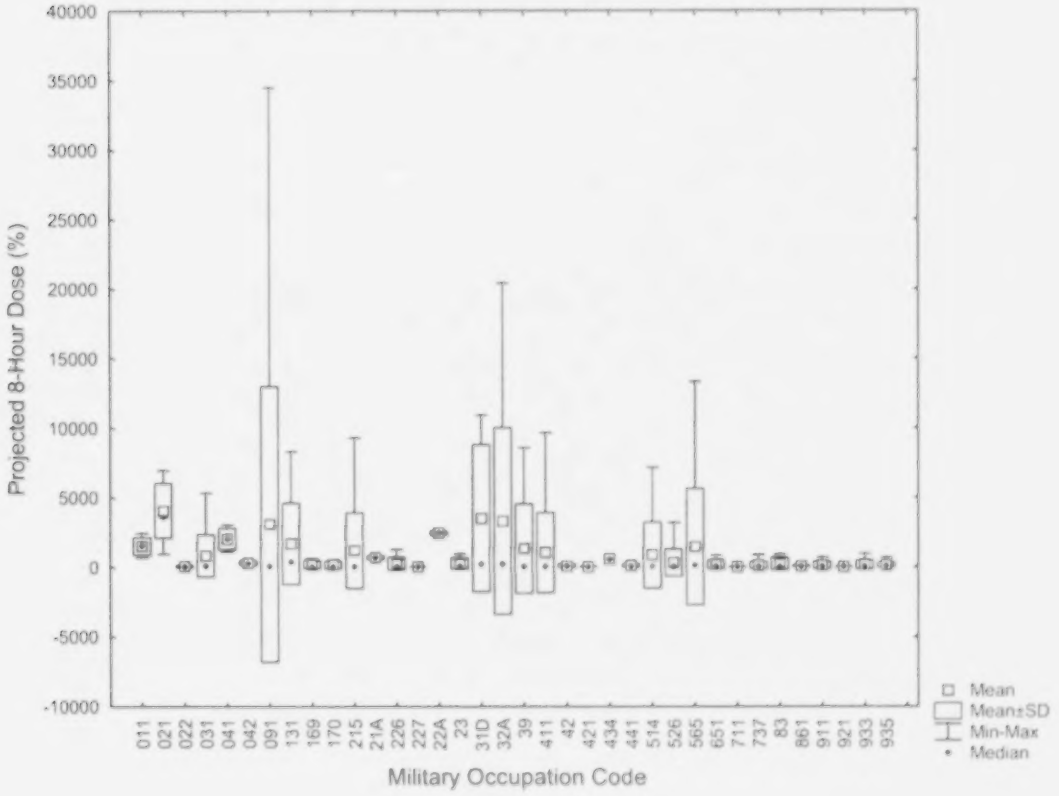

Figure 20: Dosimeter Three - Projected 8-Hour Dose

4.4.6.5 Upper Limit Time

For dosimeter three the upper limit time is the total time that the sound level exceeds the upper limit of 140 dB. The upper limit time was zero for all MOCs.

5 Discussion

In total 258 subjects across 36 different MOCs dosimeter measurements were collected and analyzed. Table 3 summarizes the means of the measurements of the dosimeter for each MOC. For each measurement, the 12 loudest MOCs are shaded dark gray, the middle 12 MOCs are shaded light gray, and the 12 quietest MOCs are shaded white. Appendix I presents the same graphs from the results section, however, the MOCs along the x-axis have been reordered from the loudest to the quietest. The chart described about and these graphs may help to determine which MOCs are at the greatest risk of noise induced hearing loss.

The MOCs with all or almost all of the measures being the 12 loudest are probably at the greatest risk of noise induced hearing loss. These MOCs are: MOC 011 (Armoured Soldier), MOC 021 (Artillery Soldier – Field), MOC 041 (Field Engineer), MOC 131 (Search and Rescue Technician), MOC 22A (Artillery Officer), MOC 31D (Air Navigator – Transport), MOC 32A (Pilot) and MOC 411 (Vehicle Technician). However, MOCs not listed as the greatest risk of noise induced hearing loss may still cause significant hearing loss.

This dosimeter survey as well as the audiograms collected as part of the larger study may help to determine where hearing conservation resources need to be focused.

				Dosimeter 1					Dosimeter 2					Dosimeter 3				
MOC	Peak	Max	Min	LAVG	TWA	Dose	8HrDose	ULT	LAVG	TWA	Dose	8HrDose	ULT	LAVG	TWA	Dose	8HrDose	ULT
011	148.3	123.2	69.9	96.5	96.5	958.4	958.4	3.404	92.2	92.2	139.6	139.5	0.000	96.5	96.5	1519.0	1519.0	0.000
021	144.9	120.4	69.9	100.5	100.5	2569.8	2569.8	2.637	95.4	95.4	224.7	224.6	0.000	100.5	100.5	4073.0	4073.0	0.000
022	144.2	113.5	69.9	80.0	79.6	34.3	35.1	0.199	68.5	67.9	6.5	6.8	0.000	80.0	79.6	54.4	55.7	0.000
031	145.3	120.9	69.9	87.1	86.2	522.7	527.0	0.488	76.2	74.9	25.3	26.4	0.003	87.1	86.2	828.5	835.2	0.000
041	147.4	131.6	69.9	97.8	97.8	1285.6	1285.6	2.338	90.9	90.9	126.5	126.5	0.002	97.8	97.8	2037.7	2037.7	0.000
042	147.1	117.8	69.9	89.2	89.2	187.0	187.0	1.100	82.9	82.9	40.0	40.0	0.000	89.2	89.2	296.4	296.4	0.000
091	144.4	113.2	69.9	84.4	83.9	1894.8	1960.3	0.990	75.1	74.3	91.8	96.4	0.022	84.4	83.9	3003.1	3107.0	0.000
131	152.0	119.6	69.9	89.4	88.8	971.9	1071.5	2.206	80.2	79.2	70.3	79.3	0.001	89.4	88.8	1540.4	1698.3	0.000
169	144.5	114.4	69.9	82.0	81.4	111.0	126.1	0.183	70.2	69.3	11.5	13.1	0.000	82.0	81.4	175.9	199.8	0.000
170	147.4	114.0	69.9	82.8	82.2	85.6	98.3	0.170	72.1	71.2	8.8	10.1	0.000	82.8	82.2	135.6	155.7	0.000
215	150.5	115.1	69.9	85.2	85.2	743.9	763.3	0.463	76.0	76.0	44.9	45.8	0.005	85.2	85.2	1179.0	1209.7	0.000
21A	159.4	121.4	69.9	93.4	93.4	441.4	441.4	2.043	89.6	89.6	95.2	95.2	0.000	93.4	93.4	699.6	699.6	0.000
226	145.1	113.6	69.9	80.7	80.6	157.0	157.0	0.781	69.3	69.2	25.4	25.4	0.000	80.7	80.6	248.8	248.8	0.000
227	143.3	110.4	69.9	77.6	76.9	10.0	11.5	0.105	67.1	66.0	3.7	4.3	0.000	77.6	76.9	15.9	18.2	0.000
22A	139.8	117.0	69.9	98.9	98.9	1548.2	1548.2	2.355	94.0	94.0	173.3	173.3	0.000	98.9	98.9	2453.8	2453.8	0.000
23	147.6	118.0	69.9	83.3	82.6	163.3	165.0	0.296	70.3	69.3	13.5	13.8	0.002	83.3	82.6	258.9	261.6	0.000
31D	156.2	119.4	69.9	88.9	88.7	2022.4	2215.6	1.640	78.6	78.2	130.5	142.7	0.005	88.9	88.7	3205.5	3511.6	0.000
32A	148.6	115.4	69.9	90.7	90.2	2009.0	2103.1	1.502	83.5	82.8	103.5	111.3	0.020	90.7	90.2	3184.1	3333.4	0.000
39	151.3	116.8	69.9	86.0	85.5	747.4	843.6	0.409	74.7	73.7	48.2	54.4	0.003	86.0	85.5	1184.7	1337.1	0.000
411	146.8	117.0	69.9	86.4	86.3	650.3	659.0	0.849	79.0	78.9	51.4	52.2	0.003	86.4	86.3	1030.7	1044.6	0.000
42	139.8	109.4	69.9	82.1	82.1	57.9	57.9	0.110	70.0	70.0	6.4	6.4	0.000	82.1	82.1	91.7	91.7	0.000
421	144.0	111.8	69.9	79.6	79.3	18.4	19.2	0.173	69.2	68.8	5.9	6.1	0.000	79.6	79.3	29.1	30.4	0.000
434	149.9	130.3	69.9	92.6	92.5	354.4	361.0	0.080	74.0	73.9	10.7	10.9	0.000	92.6	92.5	561.7	572.2	0.000
441	147.6	111.9	69.9	82.9	82.8	62.7	64.6	0.635	74.4	74.3	18.6	19.1	0.000	82.9	82.8	99.4	102.3	0.000
514	149.1	115.8	69.9	84.1	84.0	539.3	540.9	0.486	74.9	74.7	34.2	34.7	0.003	84.1	84.0	854.7	857.4	0.000
526	147.8	112.6	69.9	80.6	80.5	201.5	201.8	0.225	69.1	69.0	17.1	17.2	0.000	80.6	80.5	319.4	319.8	0.000
565	144.2	116.1	69.9	87.5	87.4	909.4	925.2	0.791	79.8	79.6	33.0	33.7	0.002	87.5	87.4	1441.4	1466.3	0.000
651	142.1	111.5	69.9	82.3	82.2	106.7	109.5	0.374	72.9	72.7	14.8	15.2	0.000	82.3	82.2	169.1	173.5	0.000
711	142.6	106.6	69.9	76.3	75.7	7.6	8.6	0.065	65.3	64.3	3.0	3.3	0.000	76.3	75.7	12.1	13.7	0.000
737	144.7	113.6	69.9	80.1	79.5	63.8	68.4	0.215	68.7	67.7	8.6	9.6	0.000	80.1	79.5	101.1	108.4	0.000
83	148.4	115.3	69.9	81.2	81.2	150.6	150.6	0.108	66.1	66.1	11.0	11.0	0.000	81.2	81.2	238.7	238.7	0.000
861	140.6	110.0	69.9	82.7	82.7	41.3	41.8	0.643	76.8	76.7	17.6	17.8	0.000	82.7	82.7	65.5	66.2	0.000
911	146.1	115.2	69.9	81.1	81.0	76.5	77.4	0.181	70.1	70.0	8.6	8.7	0.000	81.1	81.0	121.3	122.6	0.000
921	141.3	107.4	69.9	75.8	75.7	9.5	9.7	0.110	64.8	64.7	4.3	4.4	0.000	75.8	75.7	15.1	15.4	0.000
933	145.5	112.9	69.9	80.1	80.1	91.4	97.5	0.942	69.7	69.6	22.7	24.1	0.000	80.1	80.1	144.9	154.6	0.000
935	145.9	115.6	69.9	84.6	84.4	88.1	91.5	0.539	76.8	76.6	18.4	18.9	0.000	84.6	84.4	139.7	145.1	0.000

Loudest 12 MOCs Middle 12 MOCs Quietest 12 MOCs

Table 3: Summary of Mean Measurements

				Dosimeter 1					Dosimeter 2					Dosimeter 3				
MOC	Peak	Max	Min	LAVG	TWA	Dose	8HrDose	ULT	LAVG	TWA	Dose	8HrDose	ULT	LAVG	TWA	Dose	8HrDose	ULT
011	148.3	123.2	69.9	96.5	96.5	958.4	958.4	3.404	92.2	92.2	139.6	139.5	0.000	96.5	96.5	1519.0	1519.0	0.000
021	144.9	120.4	69.9	100.5	100.5	2569.8	2569.8	2.637	95.4	95.4	224.7	224.6	0.000	100.5	100.5	4073.0	4073.0	0.000
022	144.2	113.5	69.9	80.0	79.6	34.3	35.1	0.199	68.5	67.9	6.5	6.8	0.000	80.0	79.6	54.4	55.7	0.000
031	145.3	120.9	69.9	87.1	86.2	522.7	527.0	0.488	76.2	74.9	25.3	26.4	0.003	87.1	86.2	828.5	835.2	0.000
041	147.4	131.6	69.9	97.8	97.8	1285.6	1285.6	2.338	90.9	90.9	126.5	126.5	0.002	97.8	97.8	2037.7	2037.7	0.000
042	147.1	117.8	69.9	89.2	89.2	187.0	187.0	1.100	82.9	82.9	40.0	40.0	0.000	89.2	89.2	296.4	296.4	0.000
091	144.4	113.2	69.9	84.4	83.9	1894.8	1960.3	0.990	75.1	74.3	91.8	96.4	0.022	84.4	83.9	3003.1	3107.0	0.000
131	152.0	119.6	69.9	89.4	88.8	971.9	1071.5	2.206	80.2	79.2	70.3	79.3	0.001	89.4	88.8	1540.4	1698.3	0.000
169	144.5	114.4	69.9	82.0	81.4	111.0	126.1	0.183	70.2	69.3	11.5	13.1	0.000	82.0	81.4	175.9	199.8	0.000
170	147.4	114.0	69.9	82.8	82.2	85.6	98.3	0.170	72.1	71.2	8.8	10.1	0.000	82.8	82.2	135.6	155.7	0.000
215	150.5	115.1	69.9	85.2	85.2	743.9	763.3	0.463	76.0	76.0	44.9	45.8	0.005	85.2	85.2	1179.0	1209.7	0.000
21A	159.4	121.4	69.9	93.4	93.4	441.4	441.4	2.043	89.6	89.6	95.2	95.2	0.000	93.4	93.4	699.6	699.6	0.000
226	145.1	113.6	69.9	80.7	80.6	157.0	157.0	0.781	69.3	69.2	25.4	25.4	0.000	80.7	80.6	248.8	248.8	0.000
227	143.3	110.4	69.9	77.6	76.9	10.0	11.5	0.105	67.1	66.0	3.7	4.3	0.000	77.6	76.9	15.9	18.2	0.000
22A	139.8	117.0	69.9	98.9	98.9	1548.2	1548.2	2.355	94.0	94.0	173.3	173.3	0.000	98.9	98.9	2453.8	2453.8	0.000
23	147.6	118.0	69.9	83.3	82.6	163.3	165.0	0.296	70.3	69.3	13.5	13.8	0.002	83.3	82.6	258.9	261.6	0.000
31D	156.2	119.4	69.9	88.9	88.7	2022.4	2215.6	1.640	78.6	78.2	130.5	142.7	0.005	88.9	88.7	3205.5	3511.6	0.000
32A	148.6	115.4	69.9	90.7	90.2	2009.0	2103.1	1.502	83.5	82.8	103.5	111.3	0.020	90.7	90.2	3184.1	3333.4	0.000
39	151.3	116.8	69.9	86.0	85.5	747.4	843.6	0.409	74.7	73.7	48.2	54.4	0.003	86.0	85.5	1184.7	1337.1	0.000
411	146.8	117.0	69.9	86.4	86.3	650.3	659.0	0.849	79.0	78.9	51.4	52.2	0.003	86.4	86.3	1030.7	1044.6	0.000
42	139.8	109.4	69.9	82.1	82.1	57.9	57.9	0.110	70.0	70.0	6.4	6.4	0.000	82.1	82.1	91.7	91.7	0.000
421	144.0	111.8	69.9	79.6	79.3	18.4	19.2	0.173	69.2	68.8	5.9	6.1	0.000	79.6	79.3	29.1	30.4	0.000
434	149.9	130.3	69.9	92.6	92.5	354.4	361.0	0.080	74.0	73.9	10.7	10.9	0.000	92.6	92.5	561.7	572.2	0.000
441	147.6	111.9	69.9	82.9	82.8	62.7	64.6	0.635	74.4	74.3	18.6	19.1	0.000	82.9	82.8	99.4	102.3	0.000
514	149.1	115.8	69.9	84.1	84.0	539.3	540.9	0.486	74.9	74.7	34.2	34.7	0.003	84.1	84.0	854.7	857.4	0.000
526	147.8	112.6	69.9	80.6	80.5	201.5	201.8	0.225	69.1	69.0	17.1	17.2	0.000	80.6	80.5	319.4	319.8	0.000
565	144.2	116.1	69.9	87.5	87.4	909.4	925.2	0.791	79.8	79.6	33.0	33.7	0.002	87.5	87.4	1441.4	1466.3	0.000
651	142.1	111.5	69.9	82.3	82.2	106.7	109.5	0.374	72.9	72.7	14.8	15.2	0.000	82.3	82.2	169.1	173.5	0.000
711	142.6	106.6	69.9	76.3	75.7	7.6	8.6	0.065	65.3	64.3	3.0	3.3	0.000	76.3	75.7	12.1	13.7	0.000
737	144.7	113.6	69.9	80.1	79.5	63.8	68.4	0.215	68.7	67.7	8.6	9.6	0.000	80.1	79.5	101.1	108.4	0.000
83	148.4	115.3	69.9	81.2	81.2	150.6	150.6	0.108	66.1	66.1	11.0	11.0	0.000	81.2	81.2	238.7	238.7	0.000
861	140.6	110.0	69.9	82.7	82.7	41.3	41.8	0.643	76.8	76.7	17.6	17.8	0.000	82.7	82.7	65.5	66.2	0.000
911	146.1	115.2	69.9	81.1	81.0	76.5	77.4	0.181	70.1	70.0	8.6	8.7	0.000	81.1	81.0	121.3	122.6	0.000
921	141.3	107.4	69.9	75.8	75.7	9.5	9.7	0.110	64.8	64.7	4.3	4.4	0.000	75.8	75.7	15.1	15.4	0.000
933	145.5	112.9	69.9	80.1	80.1	91.4	97.5	0.942	69.7	69.6	22.7	24.1	0.000	80.1	80.1	144.9	154.6	0.000
935	145.9	115.6	69.9	84.6	84.4	88.1	91.5	0.539	76.8	76.6	18.4	18.9	0.000	84.6	84.4	139.7	145.1	0.000

Loudest 12 MOCs Middle 12 MOCs Quietest 12 MOCs

Table 3: Summary of Mean Measurements

6 Recommendations

It is critical to have good coordination with each military base to ensure adequate participation in the survey. In future noise surveys it may be necessary to ensure an individual's primary tasking to be organizing the participants that are required. At CFB Trenton, one individual's top priority was coordinating the participants for this noise survey. As a result, CFB Trenton was able to recruit more participants for the survey than CFB Petawawa and CFB Borden.

Many of the participants found the Activity Questionnaire focused on Army tasks and not on Navy or Air Force tasks. Questions on the Activity Questionnaire should be changed to reflect the tasks of Navy and Air Force personnel. For example, question 13 should not only ask about vehicle use but aircraft and vessel use as well. Currently question 15 asks "what percentage of your time was spent in the field over the past six months". A more appropriate question for Navy personnel may be "what percentage of your time was spent at sea in the last six months". A more appropriate question for the Air Force may be the "how many hours of flying have had in the last six months".

In addition, it is difficult to determine how typical the noise levels were for each MOCs from the data collected. It may be helpful to ask the participants to rate how typical the noise levels were during the day's measurement and allow space for participants to explain why they gave the rating that they did.

7 References

Forshaw, S.E. and Cruchley, J.I. (1982). "Hearing Protection Problems in Military Operations," in *Personal Hearing Protection in Industry* edited by P.W. Alberti, Raven Press, New York, NY, 387-402.

Giardino, D.A. & Seiler, J.P. (no date). Noise Dosimeters: Past, Present, and Future. Informational Report 1049. United States Department of the Interior. Retrieved from the Internet on June 16, 2003. www.msha.gov/techsupp/pshtcweb/ptadirs/IR1049.pdf

Noise and Hearing Loss (1990) NIH Consens Statement Online 1990 Jan 22-24; 8(1):1-24. Retrieved from the Internet on June 16, 2003. http://consensus.nih.gov/con/076/076_statement.htm.

OFSWA (2001). The Log: Health & Safety News for Workers in Ontario's Forest Industry. Retrieved from the Internet on June 16, 2003. http://www.ofswa.on.ca/thlog/dec2001/page10.html.

APPENDIX A:
Instructions Read to Participants

Appendix A:
Instructions Read to Participants

1. You are being asked to participate in a study of the noise environment in which you work. We hope that a better understanding of workplace noise will lead to better hearing protection strategies in the future.
2. If you agree to participate, you will be asked to wear this noise dosimeter that is programmed to register sound levels throughout the day, as you carry out your normal duties. The dosimeter's microphone will be attached to your clothing close to your left ear and the dosimeter can be worn on the belt or in a pocket. If for operational reasons you cannot wear the microphone near your left ear, it may be mounted near your right ear. I will start the dosimeter for you and help you to get it fitted properly. You will also be asked to sign this Consent Form that provides you with some further detail about the study.
3. I've prepared this Activity Sheet for you that has spaces to be filled in during the work day (if convenient) or after you finish working. This is to keep track of your main activities as you work. For reference, this script is copied to the back of the activity sheet.
4. When your work day is finished, please return the dosimeter and activity sheet to me here. I will go over the Activity Sheet with you and if necessary, help you complete it. You will be given a copy of the Consent Form that contains contact information for the experimental team members.
5. Precautions: Please treat the dosimeter carefully – do no open the case nor operate the keypad. Do not wear any clothing over top of the microphone, nor allow it to contact equipment you may be using. For example, if you need to put on webbing or a jacket, carefully move the microphone outside the garment and reattach. Be sure that the foam windscreen stays in place over the microphone. These simple measures will ensure that reliable data are collected.
6. Please be aware that noise dosimeters monitor sound levels and are not capable of recording or reproducing the content of conversations.
7. Thank you very much for you participation!

APPENDIX B:
Activity Questionnaire

Appendix B:
Activity Questionnaire

CF NOISE SURVEY

Dosimeter Serial No. _____

Microphone placement: _____

1. Date: _____ 2: CF Base: _____

3. MOC: _____ 4: Trade: _____

5. Service I.D. _____ 6. Rank: _____

7. Age: _____ 8. Gender: _____ 9. Handedness (Right or Left) _____

10. Length of service in CF: _____

11. Please tell us your job and light your duties, in order of occurrence;

Job: _____

Duties: _____

_____

_____

12. Equipment (e.g., machine tools) used today:

_____

_____

_____

13. Vehicles (e.g., standard military pattern) used today:

_____

_____

_____

14. Were you exposed to loud sounds during rest periods at work today? Please list.

_____

_____

_____

15. What percentage of your time was spent in the field over the past six months? _____

THANK YOU VERY MUCH FOR PARTICIPANTING IN THIS SURVEY.
THE INFORMATION THAT YOU PROVIDE WILL BE KEPT CONFIDENTIAL
RECORDS WILL NOT INDENTIFY YOU PERSONALLY

APPENDIX C:
Military Occupation Code (MOC) Descriptions

Appendix C:
Military Occupation Code (MOC) Descriptions

The following MOC descriptions were found on the Canadian Forces recruiting website at http://www.recruiting.forces.ca. Descriptions not found on the website were gathered from a military recruiter.

Armoured Soldier (MOC 011)

Armoured soldiers are members of an armoured fighting vehicle crew. They are responsible for the operation and maintenance of their vehicle, and it weapon and communication equipment. Armoured Soldiers are trained to fight as members of the Combat Arms team, which also includes the Infantry, Artillery and Field Engineer occupation. Armoured soldiers are trained initially on the tank or reconnaissance combat vehicle.

As tank personnel trained as drivers, operators or gunners, they:

- Drive and maintain the tank
- Fire the tank's main gun
- Load the main gun and machine guns
- Maintain the vehicle's communications equipment

As reconnaissance (recce) vehicle personnel trained as drivers or observers, they:

- Drive and maintain the recce vehicle
- Maintain the vehicle's machine guns and radio equipment
- Gather and relay information and intelligence about the enemy and the terrain

Artillery Soldier (Field) (MOC 021)

Artillery is part of the Combat Arms team, which actually engages the enemy. The firepower of the Artillery assists the other arms (Armoured, Infantry and Field Engineer) on their task of closing with and destroying the enemy. Artillery tasks include:

- Position, load, aim and fire artillery systems
- Operate and maintain wheeled and air portable 105mm Howizters and self-propelled 155mm Howizters
- Handle, sort and store artillery ammunition
- Establish line communications using radios and field telephones
- Use and maintain personal weapons (up to and including anti-tank weapons)
- Drive and maintain various wheeled and tracked vehicles
- Operate and perform user maintenance on fire control computers, machine-guns and light anti-tank weapons
- May fight as combat soldiers in an operational situation
- Operate and maintain survey and locating equipment

Artillery Soldier (Air Defence) (MOC 022)

The Air Defence Artillery is a member of the combat arms; however, its role is unique and autonomous to the roles of the Infantry, Armoured, Field Engineer and Field Artillery units which make up the Combat Arms Team. Air Defence Artillery is not restricted to supporting land-based operations; the protection of airfields is equally important in preventing enemy aircraft from interfering with any of our operations.

- Operate and maintain air defence missile and gun systems
- Drive and maintain various wheeled and tracked vehicles
- Handle, sort and store artillery ammunition
- Operate radios and field telephones
- Operate Air Defence Artillery target acquisition and tracking radars
- Operate and perform user maintenance on personal weapons, machine guns and light anti-tank weapons
- Fight as a combat arms soldier
- Perform Air Defence technical and administrative duties

Infantry Soldier (MOC 031)

The Infantry is the backbone of any fighting force. Its role is to "close with and destroy the enemy". Along with the Artillery, the Armoured and the Field Engineer, the Infantry forms the Combat Arms team. Trained to fight as combat troops, Infantry soldiers are capable of performing in special operations, such as airmobile, amphibious and environmental operations, including those in the Arctic and in mountain, jungle and desert areas. Infantry soldier tasks include:

- Use weapons such as rifle and pistol
- Use explosives and pyrotechnics
- Use mortars, machine-guns, anti-tank weapons, missiles and grenades
- Use communication, navigation and riot control equipment
- Inspect and maintain weapon systems, vehicles and equipment (e.g., clothing, survival gear and personal equipment)
- Participate in airborne operations
- Operate with support elements such as fighter aircraft, helicopters (troop carrying and reconnaissance) and artillery
- Engage in unarmed combat
- Employ fieldcraft and battle procedures including camouflage and concealment, internal security, patrol, escape and evasion tactics

Field Engineer (MOC 041)

The functions of field engineers are: to assist troops to live, move and fight on the battlefield; to assist in denying the same ability to the enemy; to perform duties in aid of the civil power; provide assistance to civil authority; to participate in peace-keeping operations; to perform construction and maintenance tasks in support of DND and non-DND government agencies; to drive and operate vehicles and equipment in support of Engr Ops; to maintain field installations and facilities. Field engineers fight as Infantry when required.

Field Engineer Equipment Operator (MOC 042)

A Field Engineer Equipment Operator performs similar tasks of a Mobile Support Equipment Operator (MOC 935). The Field Engineer Equipment Operator operates military vehicles ranging in size from standard automobiles to snow removal equipment and all-terrain vehicles in order to ensure the mobility of the Canadian Forces

- Operate buses, automobiles, trucks and tractor-trailers
- Operate specialized mobile equipment such as fuelling tankers, snowplows, tractors and all-terrain vehicles
- Receive, load, secure and unload materiel and equipment transported by road
- Provide transportation for combat and field operations
- Maintain equipment in serviceable condition by cleaning, inspecting and correcting minor faults
- Prepare dispatch schedules and coordinate user requirements for vehicles and equipment
- Prepare and maintain forms, records and reports related to the job.

Flight Engineer (MOC 091)

The function of the Flight Engineer is to act as an operator/maintainer in support of CF air operations. Air operational tasks include: mission planning, pre and post-flight inspections, the monitoring and operation of aircraft systems, identifying and responding correctly to emergency and abnormal situations, the calculation of aircraft and power plant performance data, weight and balance, take-off and landing data and special duties associated with specific mission roles, including NCG operations. Maintenance activities include the certification of aircraft for flight, the completion of scheduled and unscheduled inspections, the rectification and certification of aircraft unserviceabilities, and petroleum, oil and lubricants (POL) replenishment. Flight Engineers also carry out a variety of Operational Flight Trainer (OFT) duties, administration and supervisory functions, and are the subject matter experts on technical matters to the aircraft commander.

Search and Rescue Technician (MOC 131)

SAR Techs are highly trained specialists who provide on-scene medical attention and rescue for aviators, mariners and others in distress in remote or hard to reach areas.

They are trained in advanced trauma life-support, land and sea survival, rescue techniques from helicopters, parachuting, diving, mountain climbing and rappelling.

In the air, they act as spotters, providing medical care during medical evacuation flights, direct the dropping of equipment and supplies by parachute and parachute and hoist from the planes and helicopters. On the ground, they render on-site medical care to casualties, organize and lead ground search teams and perform mountain rescue operations to assist and recover casualties.

They are trained to operate boats and to perform both surface and underwater rescues using scuba gear. They are trained as survival experts under all Canadian climatic and terrain conditions including on land, at sea, in the Arctic, on mountains and on glaciers. They are also trained to communicate with

over-flying Aircraft by use of radios, flares, smoke, ground and hand signaling devices and other methods.

Air Traffic Controller (MOC 169), Radar Controller (MOC 170) and Aerospace Control (MOC 39)

Air Traffic Controller, Radar Controllers and Aerospace Control perform similar tasks. They operate radars, computers, communications and other sensor systems in the surveillance and control of airspace, both Canadian and foreign. AC Ops participate in tactical operations during air sovereignty, domestic airspace defence and counter drug smuggling missions, as well as in peacekeeping aerospace missions and enforcement of Canadian, NORAD and NATO aerospace policies. They control and coordinate the movement of military and civilian air/ground traffic at CF aerodromes and tactical units.

- Operate command and control systems (ie, Sector Operations Control Centre (SOCC), Airborne Warning and Control System (AWACS), Space Tracking)
- Operate electronic display consoles
- Operate communications systems and associated equipment
- Operate the Precision Approach Radar (PAR)
- Provide ground control instructions to aircraft and vehicular traffic operating on the aerodrome surface
- Provide flight advisory to aircraft
- Interpret weather reports
- Maintain records
- Respond to emergency situations

Signal Operator (MOC 215)

Signal Operators are part of the Communications career field. They provide fast, accurate voice and data communications to Army units using the top of the line technology, and are also employed with Navy and Air Forces. Technologies include satellite; digitized, fixed, air transportable and mobile information and communications equipment. Signal Operators:

- perform in land operations and are familiar with military weapons
- install and operate satellite communication systems
- install and operate digitized high frequency, very high frequency, and ultra high frequency radios
- manage Local Area Network and Local Distribution Network
- use fiber optic cable in transmitting information
- perform duties of a System Administrator
- generate cryptographic keying and operate cryptographic equipment
- coordinate circuit restoral on communications and information networks
- perform information system administration duties
- plan communication services
- sites and erect all types of antennae

Armour Officer (MOC 21A)

The function of an Armour officer is to command and to lead armoured troops, exploiting armour firepower, mobility, flexibility and shock action on the modern battlefield. The Amour officer is

responsible for the training, the morale, the discipline, and the combat efficiency of his troops and for the operational readiness of his equipment. They may be involved with peacekeeping, truce supervisory missions or civil emergencies.

Aerospace Telecommunications and Information Systems Technician (MOC 226)

The Aerospace Telecommunications and Information Systems (ATIS) Technician performs, supervises and directs repair and maintenance of all types of Air Force systems, as well as national and infrastructure Operational Command and Control Information Systems. These include: static and deployable airfield communications systems; radar and navigational aids systems; long range radar and associated communication link systems; special purpose computer and electronic systems used in the Information Operational Group; and all levels of maintenance on associated cryptographic equipment.

ATIS technicians also maintain strategic, medium and long range radio communications systems, mobile and fixed satellite communications systems, microwave systems, EPABXs, in-house cable plants and ground telecommunications systems. ATIS technicians manage and maintain computer systems and networks at all levels. Their primary technical functions are to perform system restoral, preventive and corrective maintenance, special inspections, modifications, installations and acceptance checks, as well as repair and overhaul of all types of telecommunications and cryptographic systems.

ATIS technicians:

- Perform preventive and corrective maintenance on all types of radios, radar and data processing, cryptograph, terminal, audio and video equipment
- Perform inspections, performance tests and adjustments on strategic and tactical fixed and mobile telecommunications equipment
- Perform repairs, overhaul and support maintenance on telecommunications equipment
- Perform installations and acceptance tests
- Liaise with all levels of command and functional groups including the Base level
- Maintain and/or advise other occupations on the maintenance of the electromechanical and refrigeration requirements of telecommunications equipment
- Deploy as part of a Contingency Support Wing or as part of 8 Air Communications and Control Squadron
- Life-cycle materiel management of various telecommunications and information systems

Land Communications and Information Systems Technician (MOC 227)

Land Communications and Information Systems Technicians (LCIS TECH) repair and maintain all types of Land Forces' Communications, Command and Control and Information systems. These include: land tactical and non-tactical communications equipment and radio systems; Radio Relay Teletype (RRT) systems; Low Level Air Defence communications and radar systems; ground surveillance and miscellaneous radar systems; radiation detection and associated equipment; and all levels of maintenance on associated cryptographic (crypto) equipment. LCIS technicians also maintain strategic long range radio communications systems, portable satellite communications systems, microwave systems, personal computers and area networks, and ground telecommunications systems.

Their primary technical functions are to perform system restoral, preventive and corrective maintenance, crypto maintenance, equipment inspections, modifications, installations and acceptance checks, as well as repair and overhaul of selected types of Communications, Command and Control Information systems.

- Perform installations, and preventive and corrective maintenance on a wide range of tactical, non-tactical and strategic radio, radar, switching, data processing, cryptographic, terminal, audio and video equipment
- Install and operate test and diagnostic equipment to determine the general condition of systems
- Repair and calibrate radiation detection equipment
- Operate and do driver maintenance on commercial and standard military pattern vehicles and power generating equipment

Artillery Officer (MOC 22A)

The function of the Artillery (ARTY) officers is to command and lead field, air defence and target acquisition (TA) artillery troops and exploit their firepower, flexibility and shock action on the modern battlefield. They are responsible for the training, the morale, the discipline, and the combat efficiency of their troops, and the operational readiness of their equipment.

At all levels of employment, ARTY officers are faced with problem solving, decision-making and a variety of responsibilities. As well, they are exposed to many high technology equipment such as missile and gun systems, laser range finders, fire control computers, surveillance and acquisition radars, and communications equipment of all types.

Infantry Officer (MOC 23)

An Infantry Officer is responsible for the training and combat efficiency, discipline, morale, and physical condition and well being of the soldiers under their command, often under the most difficult of circumstances. Since the Infantry does not fight alone, the Infantry Officer must also know the characteristics, tactics and employment of the other arms who support them on the modern battlefield, including armour, artillery, field engineers, and helicopters and close support aircraft

Air Navigator (Transport) (MOC 31D)

The primary function of the Air Navigator is to plan, coordinate and direct the tactical missions of their aircraft and crew in a highly dynamic environment in order to achieve operational objectives. Air Navigators will often direct and coordinate the tactical activities of other units to achieve operational objectives. To accomplish their mission Air Navigators manage precision tactical navigation systems, remote sensor suites, communication systems, electronic warfare equipment and weapon delivery systems. Missions may include:

- Search and Rescue
- Anti-Submarine Operations
- Maritime Surface Surveillance and Targeting
- Sovereignty and Fisheries Patrols
- Counter-Narcotics Operations
- Tactical Airlift
- Air-to-Air Refuelling
- Humanitarian Relief
- Joint Operations with Foreign Militaries

Air Navigators assist in the formulation of strategic and operational policies and plans, determine air requirements and set standards.

Pilot (MOC 32A)

The Canadian Forces Pilots operate a variety of aircraft including basic and jet trainers, helicopters, heavy transport and long-range patrol aircraft as well as high performance fighters. Military pilots must be able to make use of navigation and communication systems including some of the most advanced technology presently available in the field of aviation. Pilots may also be required to operate the armament and fire control systems carried on board many of the operational types of aircraft.

Vehicle Technician (MOC 411)

The Vehicle Technician works as a member of a team that provides skilled technicians responsible for the complete range of servicing, maintenance, repair and overhaul of all land vehicles and related equipment used by the Canadian Forces. Vehicle Technicians:

- Inspect, repair, overhaul and modify all types of automotive equipment and components
- Repair, adjust and modify automotive cooling, air intake, fuel, exhaust, electrical, drive train, brake, frame, steering and suspension systems
- Repair, adjust, overhaul and modify miscellaneous equipment such as electrical generators, fuel fired heating devices and other powered equipment
- Use and maintain common and specialized tools, basic garage hydraulic, mechanical and pneumatic equipment and oxy-acetylene welding equipment
- Carry out the recovery of all types of vehicles used in the land forces, utilizing standard towing trucks and specialized tracked and wheeled recovery vehicles
- Drive all types of vehicles ranging from small jeeps to tank transporters
- Prepare and process maintenance documentation dealing with work orders, individual time cards and parts request forms

Communications and Electronics Engineer (MOC 42) and Communication and Electronic Engineer (MOC 83)

Communications and Electronics Engineering (Air) (CELE (AIR)) officers perform a wide range of tasks critical to the command, control and electronic security of the Canadian Forces in general, and the Air Force in particular. This includes the provision of telecommunications and information management services supporting operations in Canada and abroad. Other areas of responsibility will involve the formulation of policy; project management; the planning for and the acquisition of ground based surveillance, communications and information technology systems; and the operation and maintenance of the majority of tactical Air force and strategic communications, Air traffic management and electronics systems employed by the Canadian Forces (excluding systems in Aircraft and ships).

As a CELE (AIR) officer, you will become involved with numerous high tech electronic systems that support our Departmental command and control environment such as the computer networks and communications systems that support surveillance/ reconnaissance/intelligence, data/information/knowledge management, air traffic control, the full spectrum of terrestrial radio and satellite communications from HF to EHF, radar and navigation, electronic warfare, cryptography, electronic intelligence, and communications and network security. As a CELE (AIR) officer you will lead a dynamic group of highly skilled professionals who work to support the high tech environment. This skilled workforce needs leadership to develop and to guide them in the accomplishment of the mission - to provide seamless, robust and secure services in support of Canadian Forces operations.

Weapons Technician (Land) (MOC 421)

The Weapons Technician (Land) works as a member of a maintenance organization located in base or field locations and is employed in the repair and maintenance of all army weapons, ranging from pistols to artillery howitzers and tank gunnery systems..

- Inspect, repair and modify all army weapons and associated equipment
- Operate general and special tools and test equipment
- Test fire weapons
- Operate standard military vehicles
- Locate, diagnose, analyze and repair faults on weapons
- Maintain specialized equipment such as portable field kitchens, mobile laundry and shower units, security cabinets and miscellaneous equipment
- Perform required clerical duties

Fire Control Systems Technician (MOC 434)

The Fire Control Systems (FCS) Technicians are the only electronic/optronic technicians dedicated to the Land Force and are assigned to support all Canadian Forces elements. Fire Control Systems is the equipment that accurately directs ammunition onto targets using leading-edge computer technology and sighting systems. FCS Technicians are responsible for the maintenance, repair and modification of this equipment.

- Inspect, test, diagnose (faults), adjust, repair, recondition and modify electrical, electro-mechanical, electronic, electro-optic and mechanical equipment, optical instruments and Weapon and Missile Control Systems
- Repair Surveillance/Thermal Observation Systems
- Maintain Vehicle Satellite Navigation Systems
- Maintain Fibre Optic Systems
- Repair LASER Systems
- Maintain Optical, Electrical, and Electronic Test Equipment
- Repair portable and trailer-mounted power generating systems.
- Operate and maintain general purpose and specialized tools and equipment
- Drive Standard Military Pattern vehicles

Materials Technician (MOC 441)

The Materials Technician is a highly skilled and versatile technician who is trained to function as a member of an Army Maintenance Unit. The Materials Technician diversified skills include welding, metal work, autobody repair, fiberglass and textile repair, machining and refinishing in support of Army and other land-based vehicles and equipment.

- Manufacture original equipment, components or replacement items from base metals, alloys and synthetic materials
- Weld base metals, alloys and synthetic materials using a variety of welding techniques and equipment
- Fabricate and repair items made from fiberglass, rubber, textile, leather and synthetic materials
- Inspect, repair, modify and perform rust and corrosion control procedures on autobodies, their frames and components

- Operate precision machine tools, sewing machines and a variety of hand and power tools
- Carry out procedures such as grinding, turning, shaping, finishing and heat treating
- Clean, repaint, finish and refinish plastic and metal surfaces
- Operate standard military vehicles

Aviation System Technician (MOC 514)

The Aviation Systems Technician (AVN TECH) is a member of the air maintenance team that handles, services and maintains Canadian Forces aircraft, ground equipment and associated support facilities.

The AVN TECH is responsible for the maintenance of the aircraft aviation systems, which include the following:

- Propulsion system and components
- Airframe system and components
- Electrical system and components
- Weapon system and components
- Aircraft life support equipment

AVN TECH also:

- Test aviation systems
- Inspect aviation systems for defects
- Fix defects in aviation systems
- Perform quality assurance checks
- Prepare and maintain aircraft forms and statistical data
- Perform aircraft handling tasks which include parking, towing, marshalling, starting, refueling, cleaning and de-icing
- Operate aircraft support equipment

Avionics Systems Technician (526)

The Avionics Systems Technicians (AVS TECH) are aircraft electronic technicians. They are responsible for maintaining all automatic flight control systems, navigation systems, compass systems, airborne communication systems and radar systems on both land- and ship-based fixed-wing aircraft and helicopters. As part of the aircraft maintenance team, the AVS TECH is responsible for first line servicing operations in launching and recovering all types of aircraft.

- Carry out performance tests, preventive/corrective maintenance and calibration of aircraft communication, intercom, search radar, fire control radar, acoustic sensing, infra-red radar, electronic warfare, navigation, compass and flight control systems and their associated components
- Set up and operate test equipment to maintain the above systems
- Operate and maintain computer controlled automatic test stations
- Serve as an instructor in field technical training units, training squadrons or basic training units
- Prepare and maintain aircraft forms and statistical data
- Operate aircraft support equipment

- Perform first line servicing tasks such as marshalling, parking, towing, starting, refueling, cleaning and de-icing

Aircraft Structures Technician (MOC 565)

The Aircraft Structures Technician (ACS TECH) is a member of the air maintenance team that handles, services and maintains Canadian Forces aircraft and associated equipment. The ACS TECH is responsible for the maintenance and repair of the aircraft structures and related components. This occupation encompasses a variety of skills and abilities relating to tasks such as metal and composite repair, refinishing, painting, machining and welding.

- Carry out inspections of aircraft structures and related components
- Fix defects by repair or replacement using unique aircraft fastening hardware, ferrous and non-ferrous materials, composite materials, chemicals, adhesives, paints and textiles
- Manufacture and install aircraft structural components required for prototype modifications and projects
- Weld base metals, alloys and casting materials, using oxyacetylene, electrical arc, inert gas and resistance welding techniques and equipment
- Manufacture original aircraft equipment, components or replacement items from base metals using special cutting tools, engine lathe and milling machines
- Fabricate or repair aircraft structures using composite, fibreglass, textiles, leather, plastic and synthetic components
- Carry out corrosion control inspection of ferrous and non-ferrous materials, on and off aircraft structures
- Prepare and maintain aircraft forms and statistical data
- Act as an integral member of the aircraft maintenance operation in the areas of aircraft servicing, supply, tool control and safety

Fire Fighter (MOC 651)

The primary purpose of a military Fire Fighter (FIRE FTR) is to prevent the loss of life or property due to fire. Personnel in this occupation serve in all three elements, performing a variety of tasks including Aircraft Rescue, Structural, Wildland and Shipboard Fire Fighting, Auto Extrication, Hazardous Material, and Confined Space/High-Angle Rescue. Fire Investigation and Fire Prevention and Life Safety Inspection are also areas of expertise.

- As a member of a fire attack team, perform rescue, extinguishment, ventilation, overhaul and forcible entry operations
- Drive and operate all types of structural, aircraft rescue and wildland fire fighting vehicles used on all Canadian Force Bases/Wings
- Inspect and test all Fixed Fire Suppression and Detection systems within DND establishments
- Maintain fire department ancillary equipment such as ladders, hose, rope, breathing apparatus, extinguishers, personal protective equipment and all associated rescue equipment and vehicles
- Perform inspector duties, conduct inspections, and project reviews and provide recommendations and corrective measures
- Provide peer and public instructional education

- Respond to Hazardous Material, Auto Extrication , Confined Space and High angle rescue situations
- Investigate Fires
- Provide helicopter rescue and damage control services as a member of Section Base Three while providing maintenance to all fire fighting equipment onboard HMC Ships
- Respond as part of the Airfield Engineering Squadron (AES)
- Respond to Aircraft Cable engagements on Wings and be capable of providing Mobile Arrestor Gear (MAG) skills on deployment
- As Senior Fire Fighter, provide Command and Control on the fire ground and function as Fire Chief on Military bases, ships and army encampments

Medical Assistant (MOC 711) and Medical Technician (MOC 737)

The Medical Assistant and Technician provided similar tasks. They are trained as a primary care paramedic (PCP) with additional skills in clinical procedures and basic nursing care. They are integral members of the military health care team who assist Physicians, Physician Assistants and Nurses in the treatment of the sick and injured across the full spectrum of operational settings and static units of the Canadian Forces.

Their functions are:

- Care for sick and injured,
- Provide basic trauma life support and initial treatment,
- Recover casualties from the point of injury and evacuate them to a higher level of medical care utilizing wheeled or tracked ambulances or aircraft,
- Assist with the rescue of personnel from crashed vehicles, tanks, ships, aircraft and damaged buildings,
- Provide basic advice on disease prevention, hygiene and sanitation,
- Collect specimens and perform some basic laboratory procedures,
- Operate and perform user maintenance on medical and life support equipment,
- Perform Electrocardiograms (ECG's), Audiograms (Hearing tests),
- Initiate, maintain, distribute medical records, documents, reports and returns, and
- Maintain, replenish and account for general and medical supplies.

Cook (MOC 861)

Cooks in the Canadian Forces prepare a variety of nutritious meals for military personnel, and, on occasion, civilians. The food they make varies from meals prepared in a trailer in the field to formal multi-course dinners for military and civilian dignitaries.

- Prepare nutritionally balanced meals ranging from light lunches to formal banquets
- Prepare extra meals, snacks and box lunches for personnel working shifts
- Order and store all food-related items
- Serve meals at steam tables
- Prepare soups, salads, sauces and vegetables
- Cut, prepare and cook meat
- Make cakes, pastries and other baked goods including decorative pieces
- Keep financial accounts
- Plan menus
- Ensure sanitation and cleaning of kitchen/dining areas and equipment

- Prepare special meals in hospitals

Supply Technician (MOC 911)

Supply Technicians (SUP TECHs) are responsible for ensuring that all the supplies necessary for Canadian Forces operations are available when and where they are required. The diverse materiel they handle includes food, fuel, heavy machinery, stationery and clothing. Purchasing, warehousing, shipping, receiving and stock control are all functions of this occupation. Supply Technicians:

- Receive, handle and prepare items for shipment
- Operate military vehicles up to 10 tonne, and material handling equipment such as forklifts
- Prepare invoices and shipping documents
- Order material from internal and external sources and purchase supplies (by cash or contract)
- Deliver supplies to operational units
- Perform stock recordkeeping, stocktaking and inventory control
- Maintain accounting and financial records

Ammunition Technician (MOC 921)

Ammunition Technician perform duties related to storage, inspection, movement, repair, modification, testing and destruction of ammunition both in the field and in Depot by: lifting, storing, preparing for movement, and moving ammunition, tools, and specialized ammunition support equipment; conducting range clearance operations; preparing for destruction and destroying ammunition. Material is usually packaged in crates, boxes and pallets. Material Handling Equipment is limited in the field but is available in Depot. Ammunition Technicians are regularly and continuously dealing with the stress of working with ammunition and explosives and must be capable of working long hours against severe time constraints.

Traffic Technician (MOC 933)

Traffic Technicians (TFC TECH) plan and execute the movement of personnel and materiel by road, rail, air and sea. Their duties include passenger reception, warehouse operations, aircraft and rail load planning, documentation and aircraft loading/unloading.

- Prepare, load, secure and offload baggage, cargo and freight from road, rail, air and water transport vehicles
- Plan and arrange movements of personnel, furniture and effects, materiel and equipment by military and commercial means
- Liaise with commercial moving, storage and transportation firms
- Prepare, process, record and account for all transportation documents and forms relating to personnel and materiel movements
- Process passengers for travel at military air terminals and coordinate movement of passengers through commercial terminals
- Act as a member of a Mobile Air Movements Team
- Operate military cargo and passenger vehicles and materiel handling equipment
- Maintain financial records

Mobile Support Equipment Operator (935)

The Mobile Support Equipment Operator (MSE OP) operates military vehicles ranging in size from standard automobiles to snow removal equipment and all-terrain vehicles in order to ensure the mobility of the Canadian Forces

- Operate buses, automobiles, trucks and tractor-trailers
- Operate specialized mobile equipment such as fuelling tankers, snowplows, tractors and all-terrain vehicles
- Receive, load, secure and unload materiel and equipment transported by road
- Provide transportation for combat and field operations
- Maintain equipment in serviceable condition by cleaning, inspecting and correcting minor faults
- Prepare dispatch schedules and coordinate user requirements for vehicles and equipment
- Prepare and maintain forms, records and reports related to the job

APPENDIX D:
Descriptive Statistics

Appendix D:
Descriptive Statistics

This appendix includes descriptive statistics for the following measurements:

- Peak
- Dosimeter 1
  - Maximum Level
  - Minimum Level
  - Average Sound Level
  - Time Weighted Average
  - Dose
  - Projected 8-Hour Dose
  - Upper Limit Time
- Dosimeter 2
  - Maximum Level
  - Minimum Level
  - Average Sound Level
  - Time Weighted Average
  - Dose
  - Projected 8-Hour Dose
  - Upper Limit Time
- Dosimeter 3
  - Maximum Level
  - Minimum Level
  - Average Sound Level
  - Time Weighted Average
  - Dose
  - Projected 8-Hour Dose
  - Upper Limit Time

Peak (dBA)

Dosimeter Peak

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	148.4000	148.2800	146.40	149.40	1.1735
021	7	147.0000	144.9286	138.30	148.50	4.4489
022	10	145.9500	144.1800	136.10	149.80	4.1545
031	13	147.5000	145.2615	133.30	149.10	4.7505
041	6	148.5500	147.4000	141.70	149.60	2.9223
042	5	147.7000	147.1000	144.10	148.30	1.6971
091	12	146.7500	144.3500	133.00	149.20	5.5135
131	8	148.5500	152.0125	146.10	180.40	11.5274
169	6	148.3000	144.5000	135.50	149.30	6.4187
170	4	147.9500	147.3500	145.10	148.40	1.5199
215	12	146.3500	150.5167	139.70	180.40	14.0973
21A	3	149.1000	159.4000	148.70	180.40	18.1876
226	9	144.6000	145.1333	140.20	147.70	2.6344
227	4	143.8000	143.2750	139.60	145.90	2.7427
22A	2	139.7500	139.7500	136.50	143.00	4.5962
23	5	147.7000	147.6200	145.90	148.90	1.2538
31D	6	148.6000	156.1500	132.30	180.00	19.4118
32A	9	147.9000	148.6444	132.30	180.40	13.1631
39	7	147.4000	151.3286	141.40	179.80	12.7903
411	11	147.4000	146.8455	141.00	148.80	2.1149
42	2	139.7500	139.7500	130.70	148.80	12.7986
421	3	148.3000	144.0333	135.40	148.40	7.4769
434	1	149.9000	149.9000	149.90	149.90	.
441	4	147.6500	147.6000	146.30	148.80	1.0614
514	9	148.2000	149.1111	136.60	179.80	12.3404
526	11	147.1000	147.7636	133.90	179.90	11.7182
565	10	145.6500	144.2100	137.20	149.10	4.4648
651	7	146.4000	142.1286	129.20	149.00	7.1456
711	2	142.5500	142.5500	141.60	143.50	1.3435
737	12	146.4500	144.7250	134.60	148.20	4.1418
83	4	148.8000	148.4000	146.70	149.30	1.1690
861	9	139.9000	140.5778	134.20	148.80	4.4138
911	7	147.0000	146.1143	141.70	148.70	2.6692
921	4	139.5500	141.3000	137.10	149.00	5.5215
933	9	147.4000	145.4667	133.40	149.80	5.0599
935	20	147.2500	145.9250	135.30	149.40	3.7676
Total	258	147.0000	146.4880	129.20	180.40	8.0405

Dosimeter 1 – Maximum Level (dBA)

Dosimeter 1 SlowMax

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	122.1000	123.2400	115.40	135.00	7.1647
021	7	118.5000	120.4429	115.90	131.10	5.6184
022	10	111.0000	113.5300	103.90	125.80	7.5264
031	13	124.6000	120.9231	100.80	138.80	11.6357
041	6	133.7000	131.6000	120.40	139.00	7.0108
042	5	116.8000	117.7600	110.50	130.00	7.4922
091	12	112.4500	113.1667	103.30	129.10	8.7440
131	8	114.2500	119.6250	110.00	135.50	10.2717
169	6	113.9500	114.4000	105.00	129.00	8.3855
170	4	112.7000	113.9500	110.90	119.50	4.0419
215	12	112.9000	115.1000	100.30	130.50	9.3819
21A	3	121.5000	121.4000	119.40	123.30	1.9519
226	9	113.9000	113.6111	104.50	127.00	7.0504
227	4	110.3500	110.3500	107.30	113.40	2.7234
22A	2	116.9500	116.9500	114.20	119.70	3.8891
23	5	120.8000	118.0000	107.00	128.10	9.5590
31D	6	120.5000	119.3667	105.80	129.60	10.0606
32A	9	113.9000	115.3889	106.80	126.30	7.6701
39	7	114.5000	116.8429	108.30	130.40	9.2219
411	11	112.2000	116.9636	108.30	135.40	8.8908
42	2	109.4000	109.4000	99.50	119.30	14.0007
421	3	111.7000	111.7667	107.30	116.30	4.5004
434	1	130.3000	130.3000	130.30	130.30	
441	4	111.5000	111.8750	109.80	114.70	2.2692
514	9	113.4000	115.8111	104.50	132.10	9.3249
526	11	111.2000	112.5545	103.90	122.60	6.9105
565	10	113.5000	116.1300	106.70	142.70	10.4699
651	7	113.1000	111.5143	101.10	123.90	8.3923
711	2	106.6000	106.6000	106.10	107.10	.7071
737	12	111.4000	113.6333	107.50	130.00	6.6662
83	4	115.5500	115.2750	105.40	124.60	7.8534
861	9	109.7000	110.0000	105.30	116.70	4.0654
911	7	113.7000	115.2429	106.40	127.00	6.2319
921	4	106.5500	107.3500	104.70	111.60	2.9983
933	9	111.0000	112.8667	107.60	128.60	6.2562
935	20	114.7500	115.5950	103.70	134.80	7.4996
Total	258	113.5000	115.6609	99.50	142.70	8.5545

Dosimeter 1 – Minimum Level (dBA)

Dosimeter 1 SlowMin

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	69.9000	69.9000	69.90	69.90	.0000
021	7	69.9000	69.9000	69.90	69.90	.0000
022	10	69.9000	69.9000	69.90	69.90	.0000
031	13	69.9000	69.9000	69.90	69.90	.0000
041	6	69.9000	69.9000	69.90	69.90	.0000
042	5	69.9000	69.9000	69.90	69.90	.0000
091	12	69.9000	69.9000	69.90	69.90	.0000
131	8	69.9000	69.9000	69.90	69.90	.0000
169	6	69.9000	69.9000	69.90	69.90	.0000
170	4	69.9000	69.9000	69.90	69.90	.0000
215	12	69.9000	69.9000	69.90	69.90	.0000
21A	3	69.9000	69.9000	69.90	69.90	.0000
226	9	69.9000	69.9000	69.90	69.90	.0000
227	4	69.9000	69.9000	69.90	69.90	.0000
22A	2	69.9000	69.9000	69.90	69.90	.0000
23	5	69.9000	69.9000	69.90	69.90	.0000
31D	6	69.9000	69.9000	69.90	69.90	.0000
32A	9	69.9000	69.9000	69.90	69.90	.0000
39	7	69.9000	69.9000	69.90	69.90	.0000
411	11	69.9000	69.9000	69.90	69.90	.0000
42	2	69.9000	69.9000	69.90	69.90	.0000
421	3	69.9000	69.9000	69.90	69.90	.0000
434	1	69.9000	69.9000	69.90	69.90	.
441	4	69.9000	69.9000	69.90	69.90	.0000
514	9	69.9000	69.9000	69.90	69.90	.0000
526	11	69.9000	69.9000	69.90	69.90	.0000
565	10	69.9000	69.9000	69.90	69.90	.0000
651	7	69.9000	69.9000	69.90	69.90	.0000
711	2	69.9000	69.9000	69.90	69.90	.0000
737	12	69.9000	69.9000	69.90	69.90	.0000
83	4	69.9000	69.9000	69.90	69.90	.0000
861	9	69.9000	69.9000	69.90	69.90	.0000
911	7	69.9000	69.9000	69.90	69.90	.0000
921	4	69.9000	69.9000	69.90	69.90	.0000
933	9	69.9000	69.9000	69.90	69.90	.0000
935	20	69.9000	69.9000	69.90	69.90	.0000
Total	258	69.9000	69.9000	69.90	69.90	.0000

Dosimeter 1 – Average Sound Level (LAVG) (dBA)

Dosimeter 1 Lavg

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	96.9000	96.5000	93.60	98.90	1.9326
021	7	100.6000	100.5000	94.90	103.40	2.7423
022	10	79.1000	79.9800	74.40	87.80	4.8719
031	13	84.8000	87.0615	75.00	102.30	8.8322
041	6	98.0500	97.8000	95.50	99.80	1.7550
042	5	89.5000	89.2000	85.20	92.20	2.5466
091	12	84.4000	84.3833	71.60	110.40	11.7890
131	8	89.0500	89.4375	77.90	104.20	10.1580
169	6	78.6000	81.9667	73.60	92.70	8.4325
170	4	80.0500	82.7750	78.70	92.30	6.3924
215	12	80.7000	85.2333	77.40	104.70	9.7137
21A	3	93.5000	93.4333	92.60	94.20	.8021
226	9	79.8000	80.6556	69.80	96.00	9.0823
227	4	77.5500	77.5750	76.70	78.50	.8617
22A	2	98.9000	98.9000	98.70	99.10	.2828
23	5	82.0000	83.2800	74.00	94.60	8.9024
31D	6	88.0000	88.9000	73.30	105.40	14.1694
32A	9	88.1000	90.7000	73.10	108.10	10.9549
39	7	82.7000	86.0286	74.90	104.30	9.6055
411	11	83.0000	86.3727	79.20	104.80	7.7813
42	2	82.0500	82.0500	76.80	87.30	7.4246
421	3	79.2000	79.6000	78.00	81.60	1.8330
434	1	92.6000	92.6000	92.60	92.60	.
441	4	83.7000	82.9000	75.20	89.00	5.7114
514	9	83.7000	84.1333	75.50	103.60	8.3176
526	11	80.2000	80.5636	72.90	100.10	7.4156
565	10	86.4000	87.5100	78.60	106.20	7.5061
651	7	80.9000	82.3429	74.10	94.20	7.1559
711	2	76.2500	76.2500	75.20	77.30	1.4849
737	12	78.6500	80.1000	72.80	94.30	6.2136
83	4	78.0000	81.1750	74.10	94.60	9.1602
861	9	83.3000	82.7111	79.70	86.50	2.1883
911	7	79.8000	81.0571	76.40	93.40	5.7236
921	4	76.5500	75.7750	70.50	79.50	3.8965
933	9	77.9000	80.1333	71.70	94.90	7.5082
935	20	82.9500	84.5700	78.70	93.30	4.1240
Total	258	82.7000	85.0574	69.80	110.40	8.8296

Dosimeter 1 – Time Weighted Average (TWA) (dBA)

Dosimeter 1 Twa

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	96.9000	96.5000	93.60	98.90	1.9326
021	7	100.6000	100.5000	94.90	103.40	2.7423
022	10	78.3500	79.6400	73.40	87.80	5.1084
031	13	83.1000	86.2308	73.60	102.30	9.5353
041	6	98.0500	97.8000	95.50	99.80	1.7550
042	5	89.5000	89.2000	85.20	92.20	2.5466
091	12	84.4000	83.9333	69.50	110.30	11.9528
131	8	88.2000	88.8375	77.60	103.90	10.2190
169	6	78.0000	81.4000	73.10	92.10	8.3983
170	4	79.5000	82.2000	78.10	91.70	6.3807
215	12	80.7000	85.2000	77.20	104.50	9.6922
21A	3	93.5000	93.4333	92.60	94.20	.8021
226	9	79.8000	80.6111	69.60	96.00	9.1357
227	4	76.7000	76.9000	75.90	78.30	1.0863
22A	2	98.9000	98.9000	98.70	99.10	.2828
23	5	81.1000	82.6400	72.70	94.60	9.4849
31D	6	87.8000	88.6667	73.30	104.80	14.0215
32A	9	87.0000	90.2444	73.10	108.10	10.9264
39	7	82.2000	85.5143	74.40	103.80	9.6126
411	11	82.9000	86.3091	79.00	104.80	7.8263
42	2	82.0500	82.0500	76.80	87.30	7.4246
421	3	78.6000	79.3333	77.80	81.60	2.0033
434	1	92.5000	92.5000	92.50	92.50	.
441	4	83.6000	82.7750	75.10	88.80	5.6759
514	9	83.6000	84.0333	75.50	103.60	8.3069
526	11	80.2000	80.5091	72.70	100.10	7.4476
565	10	86.3000	87.4300	78.60	106.20	7.5206
651	7	80.8000	82.2429	74.00	94.10	7.1370
711	2	75.7000	75.7000	74.50	76.90	1.6971
737	12	77.6000	79.5083	72.70	94.20	6.2772
83	4	78.0000	81.1750	74.10	94.60	9.1602
861	9	83.2000	82.6667	79.70	86.40	2.1703
911	7	79.7000	80.9857	76.30	93.40	5.7598
921	4	76.5000	75.7000	70.40	79.40	3.9132
933	9	77.9000	80.0889	71.70	94.50	7.4104
935	20	82.9500	84.4400	78.70	92.90	4.1168
Total	258	82.5500	84.8116	69.50	110.30	8.9118

Dosimeter 1 – Dose (%)

Dosimeter 1 Dose

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	978.2700	958.4100	456.09	1548.79	398.0244
021	7	2283.0900	2569.7671	610.79	4401.85	1234.9775
022	10	14.0550	34.2930	4.33	119.64	40.7895
031	13	40.7900	522.7208	4.60	3377.64	956.1477
041	6	1284.9400	1285.6433	709.91	1915.64	488.1211
042	5	177.9900	186.9880	65.45	330.55	95.7007
091	12	56.3400	1894.7617	1.76	21185.30	6079.2503
131	8	207.1100	971.9063	11.40	4917.74	1703.3215
169	6	12.8950	110.9767	4.08	325.70	157.8823
170	4	17.8200	85.5625	13.02	293.59	138.7137
215	12	24.1650	743.8767	10.52	5640.30	1649.0634
21A	3	444.2600	441.3967	361.02	518.91	78.9839
226	9	19.0300	156.9656	1.82	790.57	292.8341
227	4	9.3700	10.0175	7.74	13.59	2.6507
22A	2	1548.1900	1548.1900	1487.64	1608.74	85.6306
23	5	25.7900	163.3420	3.73	582.16	247.9108
31D	6	131.8100	2022.4233	4.28	6051.66	3029.2581
32A	9	100.4600	2008.9589	4.03	12893.60	4210.6540
39	7	32.8200	747.4343	5.45	4803.56	1790.8724
411	11	39.1700	650.3264	15.88	6006.56	1783.5252
42	2	57.8850	57.8850	9.56	106.21	68.3419
421	3	14.3200	18.3767	12.14	28.67	8.9807
434	1	354.4200	354.4200	354.42	354.42	.
441	4	45.7750	62.7150	6.41	152.90	62.9513
514	9	45.2600	539.2833	7.12	4523.63	1494.4802
526	11	20.8000	201.5373	3.71	2019.41	603.1285
565	10	85.6850	909.4120	14.32	8267.45	2586.1165
651	7	23.9200	106.6743	5.01	508.47	183.2594
711	2	7.6350	7.6350	5.57	9.70	2.9204
737	12	11.4700	63.8042	3.75	521.44	146.4344
83	4	12.7650	150.5825	5.13	571.67	280.7542
861	9	42.0400	41.3378	18.52	86.86	21.4159
911	7	18.8100	76.5143	8.49	434.14	157.8317
921	4	9.2150	9.5375	2.21	17.51	6.5831
933	9	12.1800	91.3989	2.98	559.91	184.7954
935	20	39.3900	88.1430	14.90	390.48	98.4303
Total	258	35.6850	584.9122	1.76	21185.30	1894.4886

Dosimeter 1 – Projected 8-Hour Dose (%)

Dosimeter 1 P8Dose

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	978.2600	958.4040	456.09	1548.79	398.0250
021	7	2283.0900	2569.7643	610.79	4401.85	1234.9783
022	10	16.9625	35.1485	5.46	119.63	40.2801
031	13	60.2400	526.9508	6.23	3377.64	953.7818
041	6	1284.9300	1285.6367	709.91	1915.64	488.1214
042	5	177.9900	186.9840	65.44	330.55	95.7035
091	12	56.3300	1960.2767	2.86	21757.20	6240.0049
131	8	247.7650	1071.5275	12.40	5251.03	1830.2401
169	6	14.6950	126.0750	4.59	370.63	179.3784
170	4	20.2700	98.2550	14.68	337.80	159.7274
215	12	24.1650	763.2600	10.91	5872.54	1711.9013
21A	3	444.2600	441.3900	361.01	518.90	78.9841
226	9	19.0300	156.9811	1.89	790.56	292.8213
227	4	11.3300	11.4850	9.28	14.00	2.2644
22A	2	1548.1900	1548.1900	1487.64	1608.74	85.6306
23	5	31.3700	165.0420	5.02	582.16	246.6780
31D	6	140.7350	2215.5733	4.28	6906.21	3330.4197
32A	9	127.7200	2103.1033	4.04	12893.60	4227.0854
39	7	37.2700	843.6386	6.21	5417.75	2019.6279
411	11	40.0700	659.0418	16.71	6092.22	1808.9484
42	2	57.8750	57.8750	9.55	106.20	68.3419
421	3	16.4600	19.2033	12.49	28.66	8.4268
434	1	361.0000	361.0000	361.00	361.00	
441	4	46.7550	64.5550	6.56	158.15	65.2439
514	9	47.1900	540.9311	7.12	4523.62	1493.8893
526	11	20.9900	201.7809	3.86	2019.41	603.0491
565	10	87.9550	925.1580	14.51	8403.72	2628.5020
651	7	24.4400	109.4586	5.14	522.59	188.3614
711	2	8.6450	8.6450	6.65	10.64	2.8214
737	12	14.8650	68.3900	3.82	541.31	151.5967
83	4	12.8200	150.6050	5.12	571.66	280.7333
861	9	42.3000	41.7933	18.67	89.20	21.9687
911	7	19.0700	77.3757	8.69	438.64	159.4368
921	4	9.3750	9.7425	2.24	17.98	6.7519
933	9	12.3900	97.5178	2.98	614.79	202.2570
935	20	39.5200	91.5290	14.90	427.47	104.6451
Total	258	37.1900	605.1148	1.89	21757.20	1950.1493

Dosimeter 1: Upper Limit Time (hours)

Dosimeter 1 ULTime

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	3.1100	3.4040	1.88	4.93	1.2213
021	7	2.3900	2.6371	1.76	3.73	.8150
022	10	.1550	.1985	.05	.65	.1795
031	13	.1800	.4877	.05	2.00	.5809
041	6	2.2500	2.3383	1.14	3.79	.9037
042	5	1.2700	1.1000	.30	1.51	.4674
091	12	.6150	.9900	.01	3.17	1.1379
131	8	1.7100	2.2063	.05	5.32	2.3302
169	6	8.000E-02	.1833	.01	.75	.2807
170	4	.1650	.1700	.11	.24	5.354E-02
215	12	.2450	.4633	.06	1.84	.5142
21A	3	2.0400	2.0433	2.00	2.09	4.509E-02
226	9	5.000E-02	.7811	.01	4.83	1.6077
227	4	9.000E-02	.1050	.06	.18	5.260E-02
22A	2	2.3550	2.3550	2.28	2.43	.1061
23	5	7.000E-02	.2960	.03	.78	.3505
31D	6	1.1050	1.6400	.02	4.88	1.9887
32A	9	.8100	1.5022	.03	4.85	1.5508
39	7	.1200	.4086	.05	1.83	.6425
411	11	.4900	.8491	.23	2.50	.7607
42	2	.1100	.1100	.08	.14	4.243E-02
421	3	.1200	.1733	.08	.32	.1286
434	1	8.000E-02	8.000E-02	.08	.08	.
441	4	.5850	.6350	.03	1.34	.5424
514	9	.3300	.4856	.04	1.54	.4627
526	11	.1600	.2255	.02	.88	.2447
565	10	.7250	.7910	.16	1.93	.4669
651	7	.2900	.3743	.06	1.01	.3588
711	2	6.500E-02	6.500E-02	.06	.07	7.071E-03
737	12	.1050	.2150	.02	.76	.2333
83	4	4.500E-02	.1075	.02	.32	.1422
861	9	.5900	.6433	.26	1.59	.4027
911	7	.1200	.1814	.06	.37	.1301
921	4	.1000	.1100	.01	.23	9.092E-02
933	9	.1300	.9422	.01	5.36	1.8167
935	20	.4000	.5385	.16	1.64	.3587
Total	258	.3200	.7991	.01	5.36	1.1214

Dosimeter 2 – Maximum Level (dBA)

Dosimeter 2 Slowmax

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	122.1000	123.2400	115.40	135.00	7.1647
021	7	118.5000	120.4429	115.90	131.10	5.6184
022	10	111.0000	113.5300	103.90	125.80	7.5264
031	13	124.6000	120.9231	100.80	138.80	11.6357
041	6	133.7000	131.6000	120.40	139.00	7.0108
042	5	116.8000	117.7600	110.50	130.00	7.4922
091	12	112.4500	113.1667	103.30	129.10	8.7440
131	8	114.2500	119.6250	110.00	135.50	10.2717
169	6	113.9500	114.4000	105.00	129.00	8.3855
170	4	112.7000	113.9500	110.90	119.50	4.0419
215	12	112.9000	115.1000	100.30	130.50	9.3819
21A	3	121.5000	121.4000	119.40	123.30	1.9519
226	9	113.9000	113.6111	104.50	127.00	7.0504
227	4	110.3500	110.3500	107.30	113.40	2.7234
22A	2	116.9500	116.9500	114.20	119.70	3.8891
23	5	120.8000	118.0000	107.00	128.10	9.5590
31D	6	120.5000	119.3667	105.80	129.60	10.0606
32A	9	113.9000	115.3889	106.80	126.30	7.6701
39	7	114.5000	116.8429	108.30	130.40	9.2219
411	11	112.2000	116.9636	108.30	135.40	8.8908
42	2	109.4000	109.4000	99.50	119.30	14.0007
421	3	111.7000	111.7667	107.30	116.30	4.5004
434	1	130.3000	130.3000	130.30	130.30	.
441	4	111.5000	111.8750	109.80	114.70	2.2692
514	9	113.4000	115.8111	104.50	132.10	9.3249
526	11	111.2000	112.5545	103.90	122.60	6.9105
565	10	113.5000	116.1300	106.70	142.70	10.4699
651	7	113.1000	111.5143	101.10	123.90	8.3923
711	2	106.6000	106.6000	106.10	107.10	.7071
737	12	111.4000	113.6333	107.50	130.00	6.6662
83	4	115.5500	115.2750	105.40	124.60	7.8534
861	9	109.7000	110.0000	105.30	116.70	4.0654
911	7	113.7000	115.2429	106.40	127.00	6.2319
921	4	106.5500	107.3500	104.70	111.60	2.9983
933	9	111.0000	112.8667	107.60	128.60	6.2562
935	20	114.7500	115.5950	103.70	134.80	7.4996
Total	258	113.5000	115.6609	99.50	142.70	8.5545

Dosimeter 2: Minimum Level (dBA)

Dosimeter 2 Slowmin

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	69.9000	69.9000	69.90	69.90	.0000
021	7	69.9000	69.9000	69.90	69.90	.0000
022	10	69.9000	69.9000	69.90	69.90	.0000
031	13	69.9000	69.9000	69.90	69.90	.0000
041	6	69.9000	69.9000	69.90	69.90	.0000
042	5	69.9000	69.9000	69.90	69.90	.0000
091	12	69.9000	69.9000	69.90	69.90	.0000
131	8	69.9000	69.9000	69.90	69.90	.0000
169	6	69.9000	69.9000	69.90	69.90	.0000
170	4	69.9000	69.9000	69.90	69.90	.0000
215	12	69.9000	69.9000	69.90	69.90	.0000
21A	3	69.9000	69.9000	69.90	69.90	.0000
226	9	69.9000	69.9000	69.90	69.90	.0000
227	4	69.9000	69.9000	69.90	69.90	.0000
22A	2	69.9000	69.9000	69.90	69.90	.0000
23	5	69.9000	69.9000	69.90	69.90	.0000
31D	6	69.9000	69.9000	69.90	69.90	.0000
32A	9	69.9000	69.9000	69.90	69.90	.0000
39	7	69.9000	69.9000	69.90	69.90	.0000
411	11	69.9000	69.9000	69.90	69.90	.0000
42	2	69.9000	69.9000	69.90	69.90	.0000
421	3	69.9000	69.9000	69.90	69.90	.0000
434	1	69.9000	69.9000	69.90	69.90	.
441	4	69.9000	69.9000	69.90	69.90	.0000
514	9	69.9000	69.9000	69.90	69.90	.0000
526	11	69.9000	69.9000	69.90	69.90	.0000
565	10	69.9000	69.9000	69.90	69.90	.0000
651	7	69.9000	69.9000	69.90	69.90	.0000
711	2	69.9000	69.9000	69.90	69.90	.0000
737	12	69.9000	69.9000	69.90	69.90	.0000
83	4	69.9000	69.9000	69.90	69.90	.0000
861	9	69.9000	69.9000	69.90	69.90	.0000
911	7	69.9000	69.9000	69.90	69.90	.0000
921	4	69.9000	69.9000	69.90	69.90	.0000
933	9	69.9000	69.9000	69.90	69.90	.0000
935	20	69.9000	69.9000	69.90	69.90	.0000
Total	258	69.9000	69.9000	69.90	69.90	.0000

Dosimeter 2 – Average Sound Level (LAVG) (dBA)

Dosimeter 2 Lavg

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	92.9000	92.1600	88.30	94.00	2.2210
021	7	95.4000	95.4286	89.80	98.30	2.7921
022	10	67.3000	68.4700	61.80	79.00	5.4718
031	13	72.2000	76.2231	64.80	89.20	8.1181
041	6	92.3000	90.8500	82.70	94.30	4.3224
042	5	84.1000	82.9000	78.40	85.90	3.0075
091	12	74.6000	75.0917	56.10	105.40	15.9165
131	8	81.2500	80.1750	62.40	94.50	14.0054
169	6	68.2000	70.1833	58.70	84.70	9.3118
170	4	70.7000	72.1000	68.10	78.90	4.7972
215	12	72.2000	76.0250	65.00	97.80	10.4299
21A	3	89.7000	89.6000	89.10	90.00	.4583
226	9	69.5000	69.2667	50.50	92.50	13.8218
227	4	67.0000	67.0500	64.50	69.70	2.2472
22A	2	93.9500	93.9500	93.80	94.10	.2121
23	5	64.5000	70.3400	61.50	83.20	10.1105
31D	6	76.8500	78.5667	57.90	100.00	19.6362
32A	9	86.0000	83.5444	59.00	101.40	12.7765
39	7	71.6000	74.6571	62.80	98.30	12.1331
411	11	75.6000	79.0455	71.00	99.40	8.1360
42	2	69.9500	69.9500	68.10	71.80	2.6163
421	3	67.7000	69.2333	66.60	73.40	3.6501
434	1	74.0000	74.0000	74.00	74.00	.
441	4	77.0500	74.4000	59.90	83.60	10.1617
514	9	75.3000	74.8556	62.70	95.70	9.8955
526	11	69.3000	69.1182	57.60	92.30	9.5073
565	10	80.0000	79.8100	69.90	92.30	5.6820
651	7	73.4000	72.8571	64.00	83.70	7.7786
711	2	65.3000	65.3000	63.60	67.00	2.4042
737	12	68.7000	68.6750	54.80	82.10	9.0510
83	4	61.8000	66.1000	57.60	83.20	11.5848
861	9	77.5000	76.8000	72.40	83.00	3.4424
911	7	67.9000	70.1429	64.50	80.40	5.8506
921	4	66.6500	64.8000	53.40	72.50	8.1711
933	9	66.0000	69.7000	53.40	92.30	12.2418
935	20	75.6500	76.7850	69.90	85.20	4.2349
Total	258	73.9000	75.6919	50.50	105.40	11.2376

Dosimeter 2 – Time Weighted Average (TWA) (dBA)

Dosimeter 2 Twa

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	92.9000	92.1600	88.30	94.00	2.2210
021	7	95.4000	95.4286	89.80	98.30	2.7921
022	10	66.6250	67.9250	60.80	79.00	5.7321
031	13	70.3000	74.8538	62.60	89.20	9.2399
041	6	92.3000	90.8500	82.70	94.30	4.3224
042	5	84.1000	82.9000	78.40	85.90	3.0075
091	12	74.6000	74.3250	51.20	105.20	16.2294
131	8	80.3500	79.1625	61.70	93.30	14.1484
169	6	67.2500	69.2667	57.80	83.80	9.3183
170	4	69.8000	71.2000	67.30	77.90	4.7060
215	12	72.2000	75.9833	65.00	97.50	10.3908
21A	3	89.7000	89.6000	89.10	90.00	.4583
226	9	69.5000	69.2000	50.20	92.50	13.9096
227	4	66.2500	66.0000	63.20	68.30	2.3735
22A	2	93.9500	93.9500	93.80	94.10	.2121
23	5	62.8000	69.2800	59.30	83.20	11.0872
31D	6	76.5500	78.2000	57.50	99.40	19.4022
32A	9	84.7000	82.8333	59.00	101.40	12.6425
39	7	70.7000	73.7429	61.90	97.50	12.1726
411	11	75.4000	78.9273	70.70	99.30	8.1730
42	2	69.9500	69.9500	68.10	71.80	2.6163
421	3	67.5000	68.8000	65.50	73.40	4.1073
434	1	73.9000	73.9000	73.90	73.90	.
441	4	76.9500	74.2500	59.70	83.40	10.1792
514	9	75.3000	74.6667	62.70	95.70	9.8209
526	11	69.0000	68.9909	57.60	92.30	9.5585
565	10	79.8500	79.6400	69.80	92.20	5.6773
651	7	73.2000	72.7000	63.80	83.50	7.7374
711	2	64.3000	64.3000	62.30	66.30	2.8284
737	12	66.8500	67.6917	54.30	81.80	8.9640
83	4	61.7500	66.0750	57.60	83.20	11.5952
861	9	77.5000	76.7111	72.30	82.80	3.4349
911	7	67.8000	70.0143	64.30	80.40	5.9001
921	4	66.5000	64.6500	53.30	72.30	8.1382
933	9	66.0000	69.6111	53.40	91.60	12.0855
935	20	75.3500	76.5700	69.90	85.10	4.2412
Total	258	73.5500	75.2820	50.20	105.20	11.3772

Dosimeter 2 – Dose (%)

Dosimeter 2 Dose

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	150.3100	139.5540	78.48	175.14	36.2235
021	7	212.2600	224.6543	96.85	316.65	71.9130
022	10	3.9625	6.4515	1.76	21.67	6.2580
031	13	6.5500	25.3323	2.23	89.08	29.7718
041	6	139.3200	126.4983	36.11	180.53	54.2003
042	5	44.4000	40.0100	20.11	57.00	14.6532
091	12	11.9500	91.8025	.46	819.80	231.3660
131	8	55.3750	70.2775	1.99	156.97	72.3763
169	6	4.3000	11.5117	1.16	42.23	15.7842
170	4	6.1350	8.7975	4.27	18.65	6.6707
215	12	8.5150	44.8650	3.14	282.38	82.2644
21A	3	96.2600	95.2133	88.82	100.56	5.9396
226	9	5.8200	25.4289	.40	140.81	46.9309
227	4	3.7850	3.7300	2.44	4.91	1.1710
22A	2	173.3100	173.3100	168.85	177.77	6.3074
23	5	2.3000	13.4540	1.42	38.94	16.8329
31D	6	38.8750	130.4717	1.10	365.62	173.4848
32A	9	48.0000	103.4611	1.36	484.90	153.9033
39	7	6.9200	48.2014	2.03	281.56	103.3988
411	11	13.2500	51.4400	6.86	362.71	104.3672
42	2	6.4000	6.4000	4.79	8.01	2.2769
421	3	4.3900	5.9300	3.37	10.03	3.5871
434	1	10.6600	10.6600	10.66	10.66	
441	4	16.3900	18.5775	1.50	40.03	15.9735
514	9	12.9800	34.2189	2.28	221.14	70.4106
526	11	5.4700	17.1245	1.12	137.66	40.0985
565	10	24.5850	32.9930	6.05	134.89	36.6988
651	7	9.7400	14.8014	2.65	40.61	15.4604
711	2	2.9550	2.9550	2.15	3.76	1.1384
737	12	4.0600	8.5533	.71	32.06	9.7528
83	4	2.0050	11.0250	1.12	38.97	18.6353
861	9	17.7100	17.5833	8.59	36.85	8.7957
911	7	4.6400	8.6286	2.83	26.34	8.3983
921	4	3.9450	4.2700	.62	8.57	3.3311
933	9	3.6000	22.7422	.62	125.29	41.9413
935	20	13.1200	18.3880	6.19	50.67	11.5806
Total	258	10.2100	44.5601	.40	819.80	87.8830

Dosimeter 2 – Projected 8-Hour Dose (%)

Dosimeter 2 P8Dose

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	150.3000	139.5480	78.48	175.13	36.2196
021	7	212.2600	224.6471	96.85	316.64	71.9098
022	10	4.4550	6.7600	2.00	21.66	6.1391
031	13	8.4700	26.4154	3.03	89.08	28.9843
041	6	139.3100	126.4900	36.10	180.52	54.1992
042	5	44.3900	40.0040	20.10	56.99	14.6529
091	12	11.9450	96.3667	.90	841.93	237.2753
131	8	65.4700	79.3350	2.17	185.54	81.5084
169	6	4.9000	13.0650	1.30	47.89	17.9007
170	4	7.0050	10.0725	4.82	21.46	7.7190
215	12	8.5150	45.8392	3.14	294.00	85.3213
21A	3	96.2500	95.2067	88.81	100.56	5.9441
226	9	5.8200	25.4300	.42	140.80	46.9263
227	4	4.1400	4.3000	2.92	6.00	1.3324
22A	2	173.3050	173.3050	168.85	177.76	6.3003
23	5	2.9200	13.7580	1.90	38.93	16.5649
31D	6	42.3700	142.6817	1.17	400.20	189.9142
32A	9	57.6200	111.3233	1.35	484.89	155.5640
39	7	7.8400	54.4471	2.30	317.56	116.5954
411	11	13.5500	52.1845	7.22	367.87	105.8335
42	2	6.4000	6.4000	4.79	8.01	2.2769
421	3	4.5200	6.1433	3.88	10.03	3.3811
434	1	10.8600	10.8600	10.86	10.86	.
441	4	16.7400	19.1075	1.54	41.41	16.5502
514	9	12.9700	34.7244	2.27	221.13	70.2889
526	11	5.6800	17.1891	1.11	137.65	40.0752
565	10	25.0950	33.6950	6.13	137.11	37.2728
651	7	9.9600	15.1600	2.73	41.74	15.8714
711	2	3.3450	3.3450	2.56	4.13	1.1102
737	12	5.3150	9.5642	.76	33.27	10.1853
83	4	2.0100	11.0225	1.11	38.96	18.6305
861	9	17.7100	17.7733	8.66	37.85	9.0486
911	7	4.7000	8.7386	2.91	26.60	8.4725
921	4	4.0100	4.3600	.62	8.80	3.4236
933	9	3.5900	24.1067	.62	137.56	45.7184
935	20	13.7150	18.9480	6.19	51.29	11.7693
Total	258	10.7100	46.2153	.42	841.93	90.7319

Dosimeter 2 – Upper Limit Time (hours)

Dosimeter 2 ULTime

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	0000	0000	00	00	0000
021	7	0000	0000	00	00	0000
022	10	0000	0000	00	00	0000
031	13	0000	3.077E-03	00	02	6.304E-03
041	6	0000	1.667E-03	00	01	4.082E-03
042	5	0000	0000	00	00	0000
091	12	0000	2.167E-02	00	26	7.506E-02
131	8	0000	1.250E-03	00	01	3.536E-03
169	6	0000	0000	00	00	0000
170	4	0000	0000	00	00	0000
215	12	0000	5.000E-03	00	04	1.243E-02
21A	3	0000	0000	00	00	0000
226	9	0000	0000	00	00	0000
227	4	0000	0000	00	00	0000
22A	2	0000	0000	00	00	0000
23	5	0000	2.000E-03	00	01	4.472E-03
31D	6	0000	5.000E-03	00	02	8.367E-03
32A	9	0000	2.000E-02	00	16	5.268E-02
39	7	0000	2.857E-03	00	02	7.559E-03
411	11	0000	2.727E-03	00	03	9.045E-03
42	2	0000	0000	00	00	0000
421	3	0000	0000	00	00	0000
434	1	0000	0000	00	00	
441	4	0000	0000	00	00	0000
514	9	0000	3.333E-03	00	03	1.000E-02
526	11	0000	0000	00	00	0000
565	10	0000	2.000E-03	00	02	6.325E-03
651	7	0000	0000	00	00	0000
711	2	0000	0000	00	00	0000
737	12	0000	0000	00	00	0000
63	4	0000	0000	00	00	0000
861	9	0000	0000	00	00	0000
911	7	0000	0000	00	00	0000
921	4	0000	0000	00	00	0000
933	9	0000	0000	00	00	0000
935	20	0000	0000	00	00	0000
Total	258	0000	2.713E-03	00	26	1.948E-02

Dosimeter 3 – Maximum Level (dBA)

Dosimeter 3 Slowmax

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	122.1000	123.2400	115.40	135.00	7.1647
021	7	118.5000	120.4429	115.90	131.10	5.6184
022	10	111.0000	113.5300	103.90	125.80	7.5264
031	13	124.6000	120.9231	100.80	138.80	11.6357
041	6	133.7000	131.6000	120.40	139.00	7.0108
042	5	116.8000	117.7600	110.50	130.00	7.4922
091	12	112.4500	113.1667	103.30	129.10	8.7440
131	8	114.2500	119.6250	110.00	135.50	10.2717
169	6	113.9500	114.4000	105.00	129.00	8.3855
170	4	112.7000	113.9500	110.90	119.50	4.0419
215	12	112.9000	115.1000	100.30	130.50	9.3819
21A	3	121.5000	121.4000	119.40	123.30	1.9519
226	9	113.9000	113.6111	104.50	127.00	7.0504
227	4	110.3500	110.3500	107.30	113.40	2.7234
22A	2	116.9500	116.9500	114.20	119.70	3.8891
23	5	120.8000	118.0000	107.00	128.10	9.5590
31D	6	120.5000	119.3667	105.80	129.60	10.0606
32A	9	113.9000	115.3889	106.80	126.30	7.6701
39	7	114.5000	116.8429	108.30	130.40	9.2219
411	11	112.2000	116.9636	108.30	135.40	8.8908
42	2	109.4000	109.4000	99.50	119.30	14.0007
421	3	111.7000	111.7667	107.30	116.30	4.5004
434	1	130.3000	130.3000	130.30	130.30	
441	4	111.5000	111.8750	109.80	114.70	2.2692
514	9	113.4000	115.8111	104.50	132.10	9.3249
526	11	111.2000	112.5545	103.90	122.60	6.9105
565	10	113.5000	116.1300	106.70	142.70	10.4699
651	7	113.1000	111.5143	101.10	123.90	8.3923
711	2	106.6000	106.6000	106.10	107.10	.7071
737	12	111.4000	113.6333	107.50	130.00	6.6662
83	4	115.5500	115.2750	105.40	124.60	7.8534
861	9	109.7000	110.0000	105.30	116.70	4.0654
911	7	113.7000	115.2429	106.40	127.00	6.2319
921	4	106.5500	107.3500	104.70	111.60	2.9983
933	9	111.0000	112.8667	107.60	128.60	6.2562
935	20	114.7500	115.5950	103.70	134.80	7.4996
Total	258	113.5000	115.6609	99.50	142.70	8.5545

Dosimeter 3 – Minimum Level (dBA)

Dosimeter 3 Slowmin

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	69.9000	69.9000	69.90	69.90	.0000
021	7	69.9000	69.9000	69.90	69.90	.0000
022	10	69.9000	69.9000	69.90	69.90	.0000
031	13	69.9000	69.9000	69.90	69.90	.0000
041	6	69.9000	69.9000	69.90	69.90	.0000
042	5	69.9000	69.9000	69.90	69.90	.0000
091	12	69.9000	69.9000	69.90	69.90	.0000
131	8	69.9000	69.9000	69.90	69.90	.0000
169	6	69.9000	69.9000	69.90	69.90	.0000
170	4	69.9000	69.9000	69.90	69.90	.0000
215	12	69.9000	69.9000	69.90	69.90	.0000
21A	3	69.9000	69.9000	69.90	69.90	.0000
226	9	69.9000	69.9000	69.90	69.90	.0000
227	4	69.9000	69.9000	69.90	69.90	.0000
22A	2	69.9000	69.9000	69.90	69.90	.0000
23	5	69.9000	69.9000	69.90	69.90	.0000
31D	6	69.9000	69.9000	69.90	69.90	.0000
32A	9	69.9000	69.9000	69.90	69.90	.0000
39	7	69.9000	69.9000	69.90	69.90	.0000
411	11	69.9000	69.9000	69.90	69.90	.0000
42	2	69.9000	69.9000	69.90	69.90	.0000
421	3	69.9000	69.9000	69.90	69.90	.0000
434	1	69.9000	69.9000	69.90	69.90	.
441	4	69.9000	69.9000	69.90	69.90	.0000
514	9	69.9000	69.9000	69.90	69.90	.0000
526	11	69.9000	69.9000	69.90	69.90	.0000
565	10	69.9000	69.9000	69.90	69.90	.0000
651	7	69.9000	69.9000	69.90	69.90	.0000
711	2	69.9000	69.9000	69.90	69.90	.0000
737	12	69.9000	69.9000	69.90	69.90	.0000
83	4	69.9000	69.9000	69.90	69.90	.0000
861	9	69.9000	69.9000	69.90	69.90	.0000
911	7	69.9000	69.9000	69.90	69.90	.0000
921	4	69.9000	69.9000	69.90	69.90	.0000
933	9	69.9000	69.9000	69.90	69.90	.0000
935	20	69.9000	69.9000	69.90	69.90	.0000
Total	258	69.9000	69.9000	69.90	69.90	.0000

Dosimeter 3 – Average Sound Level (LAVG) (dBA)

Dosimeter 3 Lavg

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	96.9000	96.5000	93.60	98.90	1.9326
021	7	100.6000	100.5000	94.90	103.40	2.7423
022	10	79.1000	79.9800	74.40	87.80	4.8719
031	13	84.8000	87.0615	75.00	102.30	8.8322
041	6	98.0500	97.8000	95.50	99.80	1.7550
042	5	89.5000	89.2000	85.20	92.20	2.5466
091	12	84.4000	84.3833	71.60	110.40	11.7890
131	8	89.0500	89.4375	77.90	104.20	10.1580
169	6	78.6000	81.9667	73.60	92.70	8.4325
170	4	80.0500	82.7750	78.70	92.30	6.3924
215	12	80.7000	85.2333	77.40	104.70	9.7137
21A	3	93.5000	93.4333	92.60	94.20	.8021
226	9	79.8000	80.6556	69.80	96.00	9.0823
227	4	77.5500	77.5750	76.70	78.50	.8617
22A	2	98.9000	98.9000	98.70	99.10	.2828
23	5	82.0000	83.2800	74.00	94.60	8.9024
31D	6	88.0000	88.9000	73.30	105.40	14.1694
32A	9	88.1000	90.7000	73.10	108.10	10.9549
39	7	82.7000	86.0286	74.90	104.30	9.6055
411	11	83.0000	86.3727	79.20	104.80	7.7813
42	2	82.0500	82.0500	76.80	87.30	7.4246
421	3	79.2000	79.6000	78.00	81.60	1.8330
434	1	92.6000	92.6000	92.60	92.60	.
441	4	83.7000	82.9000	75.20	89.00	5.7114
514	9	83.7000	84.1333	75.50	103.60	8.3176
526	11	80.2000	80.5636	72.90	100.10	7.4156
565	10	86.4000	87.5100	78.60	106.20	7.5061
651	7	80.9000	82.3429	74.10	94.20	7.1559
711	2	76.2500	76.2500	75.20	77.30	1.4849
737	12	78.6500	80.1000	72.80	94.30	6.2136
83	4	78.0000	81.1750	74.10	94.60	9.1602
861	9	83.3000	82.7111	79.70	86.50	2.1883
911	7	79.8000	81.0571	76.40	93.40	5.7236
921	4	76.5500	75.7750	70.50	79.50	3.8965
933	9	77.9000	80.1333	71.70	94.90	7.5082
935	20	82.9500	84.5700	78.70	93.30	4.1240
Total	258	82.7000	85.0574	69.80	110.40	8.8296

Dosimeter 3 – Time Weighted Average (TWA) (dBA)

Dosimeter 3 Twa

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	96.9000	96.5000	93.60	98.90	1.9326
021	7	100.6000	100.5000	94.90	103.40	2.7423
022	10	78.3500	79.6400	73.40	87.80	5.1084
031	13	83.1000	86.2308	73.60	102.30	9.5353
041	6	98.0500	97.8000	95.50	99.80	1.7550
042	5	89.5000	89.2000	85.20	92.20	2.5466
091	12	84.4000	83.9333	69.50	110.30	11.9528
131	8	88.2000	88.8375	77.60	103.90	10.2190
169	6	78.0000	81.4000	73.10	92.10	8.3983
170	4	79.5000	82.2000	78.10	91.70	6.3807
215	12	80.7000	85.2000	77.20	104.50	9.6922
21A	3	93.5000	93.4333	92.60	94.20	.8021
226	9	79.8000	80.6111	69.60	96.00	9.1357
227	4	76.7000	76.9000	75.90	78.30	1.0863
22A	2	98.9000	98.9000	98.70	99.10	.2828
23	5	81.1000	82.6400	72.70	94.60	9.4849
31D	6	87.8000	88.6667	73.30	104.80	14.0215
32A	9	87.0000	90.2444	73.10	108.10	10.9264
39	7	82.2000	85.5143	74.40	103.80	9.6126
411	11	82.9000	86.3091	79.00	104.80	7.8263
42	2	82.0500	82.0500	76.80	87.30	7.4246
421	3	78.6000	79.3333	77.80	81.60	2.0033
434	1	92.5000	92.5000	92.50	92.50	.
441	4	83.6000	82.7750	75.10	88.80	5.6759
514	9	83.6000	84.0333	75.50	103.60	8.3069
526	11	80.2000	80.5091	72.70	100.10	7.4476
565	10	86.3000	87.4300	78.60	106.20	7.5206
651	7	80.8000	82.2429	74.00	94.10	7.1370
711	2	75.7000	75.7000	74.50	76.90	1.6971
737	12	77.6000	79.5083	72.70	94.20	6.2772
83	4	78.0000	81.1750	74.10	94.60	9.1602
861	9	83.2000	82.6667	79.70	86.40	2.1703
911	7	79.7000	80.9857	76.30	93.40	5.7598
921	4	76.5000	75.7000	70.40	79.40	3.9132
933	9	77.9000	80.0889	71.70	94.50	7.4104
935	20	82.9500	84.4400	78.70	92.90	4.1168
Total	258	82.5500	84.8116	69.50	110.30	8.9118

Dosimeter 3 – Dose (%)

Dosimeter 3 Dose

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	1550.5200	1519.0440	722.89	2454.78	630.8550
021	7	3618.6200	4072.9943	968.08	6976.79	1957.4010
022	10	22.2700	54.3500	6.87	189.62	64.6505
031	13	64.6500	828.4931	7.29	5353.45	1515.4633
041	6	2036.5800	2037.7000	1125.19	3036.23	773.6547
042	5	282.1100	296.3680	103.73	523.91	151.6831
091	12	89.2950	3003.1417	2.79	33578.10	9635.4400
131	8	328.2550	1540.4388	18.07	7794.46	2699.7101
169	6	20.4400	175.8950	6.46	516.23	250.2398
170	4	28.2400	135.6125	20.64	465.33	219.8570
215	12	38.3050	1179.0192	16.67	8939.68	2613.7083
21A	3	704.1400	699.5967	572.20	822.45	125.1868
226	9	30.1600	248.7844	2.88	1253.03	464.1348
227	4	14.8450	15.8775	12.27	21.55	4.2059
22A	2	2453.8300	2453.8300	2357.86	2549.80	135.7221
23	5	40.8700	258.8920	5.91	922.71	392.9330
31D	6	208.9200	3205.4783	6.79	9591.68	4801.2699
32A	9	159.2300	3184.1400	6.39	20436.00	6673.7704
39	7	52.0200	1184.6586	8.63	7613.48	2838.4718
411	11	62.0800	1030.7436	25.17	9520.19	2826.8263
42	2	91.7450	91.7450	15.15	168.34	108.3217
421	3	22.7000	29.1267	19.24	45.44	14.2333
434	1	561.7400	561.7400	561.74	561.74	.
441	4	72.5500	99.4000	10.16	242.34	99.7752
514	9	71.7300	854.7444	11.29	7169.80	2368.7008
526	11	32.9600	319.4309	5.88	3200.70	955.9391
565	10	135.8050	1441.3840	22.70	13103.60	4098.8984
651	7	37.9100	169.0729	7.94	805.91	290.4623
711	2	12.1000	12.1000	8.83	15.37	4.6245
737	12	18.1800	101.1292	5.94	826.47	232.0950
83	4	20.2250	238.6625	8.13	906.07	444.9846
861	9	66.6400	65.5211	29.36	137.67	33.9422
911	7	29.8100	121.2700	13.46	688.09	250.1560
921	4	14.6050	15.1150	3.50	27.75	10.4351
933	9	19.3000	144.8656	4.73	887.45	292.8977
935	20	62.4300	139.7035	23.62	618.90	156.0092
Total	258	56.5550	927.0662	2.79	33578.10	3002.7071

Dosimeter 3 – Projected 8-Hour Dose (%)

Dosimeter 3 P8Dose

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	1550.5200	1519.0440	722.89	2454.78	630.8550
021	7	3618.6200	4072.9900	968.08	6976.79	1957.4000
022	10	26.8975	55.7175	8.66	189.62	63.8430
031	13	95.4800	835.2031	9.88	5353.44	1511.7112
041	6	2036.5800	2037.6933	1125.18	3036.22	773.6547
042	5	282.1100	296.3660	103.73	523.91	151.6839
091	12	89.2900	3106.9833	4.54	34484.50	9890.2163
131	8	392.7050	1698.3363	19.66	8322.71	2900.8705
169	6	23.2950	199.8300	7.29	587.42	284.3017
170	4	32.1350	155.7400	23.28	535.41	253.1620
215	12	38.3000	1209.7433	17.29	9307.79	2713.3093
21A	3	704.1400	699.5933	572.19	822.45	125.1919
226	9	30.1600	248.8122	2.99	1253.02	464.1126
227	4	17.9700	18.2100	14.72	22.18	3.5759
22A	2	2453.8250	2453.8250	2357.86	2549.79	135.7150
23	5	49.7400	261.5920	7.98	922.70	390.9694
31D	6	223.0600	3511.6067	6.79	10946.10	5278.5969
32A	9	202.4300	3333.3600	6.40	20436.00	6699.8117
39	7	59.0800	1337.1429	9.85	8586.96	3201.0443
411	11	63.5100	1044.5636	26.50	9655.97	2867.1230
42	2	91.7400	91.7400	15.15	168.33	108.3146
421	3	26.1000	30.4467	19.81	45.43	13.3516
434	1	572.1900	572.1900	572.19	572.19	
441	4	74.1100	102.3225	10.40	250.67	103.4114
514	9	74.8000	857.3600	11.28	7169.79	2367.7650
526	11	33.2800	319.8173	6.13	3200.70	955.8130
565	10	139.4100	1466.3460	23.00	13319.60	4166.0820
651	7	38.7500	173.4929	8.16	828.29	298.5453
711	2	13.7050	13.7050	10.54	16.87	4.4760
737	12	23.5650	108.3975	6.06	857.95	240.2729
83	4	20.3250	238.7125	8.13	906.07	444.9524
861	9	67.0400	66.2411	29.59	141.39	34.8235
911	7	30.2400	122.6414	13.77	695.24	252.7051
921	4	14.8550	15.4375	3.55	28.49	10.6978
933	9	19.6500	154.5644	4.72	974.43	320.5726
935	20	62.6450	145.0745	23.62	677.51	165.8571
Total	258	58.9550	959.0906	2.99	34484.50	3090.9250

Dosimeter 3: Upper Limit Time (hours)

Dosimeter 3 ULTime

Trade MOC	N	Median	Mean	Minimum	Maximum	Std. Deviation
011	5	.0000	.0000	.00	.00	.0000
021	7	.0000	.0000	.00	.00	.0000
022	10	.0000	.0000	.00	.00	.0000
031	13	.0000	.0000	.00	.00	.0000
041	6	.0000	.0000	.00	.00	.0000
042	5	.0000	.0000	.00	.00	.0000
091	12	.0000	.0000	.00	.00	.0000
131	8	.0000	.0000	.00	.00	.0000
169	6	.0000	.0000	.00	.00	.0000
170	4	.0000	.0000	.00	.00	.0000
215	12	.0000	.0000	.00	.00	.0000
21A	3	.0000	.0000	.00	.00	.0000
226	9	.0000	.0000	.00	.00	.0000
227	4	.0000	.0000	.00	.00	.0000
22A	2	.0000	.0000	.00	.00	.0000
23	5	.0000	.0000	.00	.00	.0000
31D	6	.0000	.0000	.00	.00	.0000
32A	9	.0000	.0000	.00	.00	.0000
39	7	.0000	.0000	.00	.00	.0000
411	11	.0000	.0000	.00	.00	.0000
42	2	.0000	.0000	.00	.00	.0000
421	3	.0000	.0000	.00	.00	.0000
434	1	.0000	.0000	.00	.00	.
441	4	.0000	.0000	.00	.00	.0000
514	9	.0000	.0000	.00	.00	.0000
526	11	.0000	.0000	.00	.00	.0000
565	10	.0000	.0000	.00	.00	.0000
651	7	.0000	.0000	.00	.00	.0000
711	2	.0000	.0000	.00	.00	.0000
737	12	.0000	.0000	.00	.00	.0000
83	4	.0000	.0000	.00	.00	.0000
861	9	.0000	.0000	.00	.00	.0000
911	7	.0000	.0000	.00	.00	.0000
921	4	.0000	.0000	.00	.00	.0000
933	9	.0000	.0000	.00	.00	.0000
935	20	.0000	.0000	.00	.00	.0000
Total	258	.0000	.0000	.00	.00	.0000

APPENDIX E:
Dosimeter One: Case Summaries

Dosimeter 1: Case Summaries

MOC	Subject #	Peak (dBA)	Maximum Level (dBA)	Minimum Level (dBA)	Average Sound Level (LAVG) (dBA)	Time Weighted Average (TWA) (dBA)	Dose (%)	Projected 8-Hour Dose (%)	Upper Limit Time (hours)
011	1	146.4	115.4	69.9	96.0	96.0	789.12	789.11	4.32
011	2	149.1	121.4	69.9	97.1	97.1	1019.78	1019.77	2.78
011	3	148.1	135.0	69.9	98.9	98.9	1548.79	1548.79	3.11
011	4	148.4	122.3	69.9	93.6	93.6	456.09	456.09	1.88
011	5	149.4	122.1	69.9	96.9	96.9	978.27	978.26	4.93
021	6	146.4	118.5	69.9	100.6	100.6	2283.09	2283.09	2.20
021	7	138.3	116.1	69.9	100.5	100.5	2228.38	2228.37	2.39
021	8	147.0	124.8	69.9	94.9	94.9	610.79	610.79	1.76
021	9	148.5	115.9	69.9	102.8	102.8	3843.05	3843.05	2.99
021	10	148.2	131.1	69.9	100.6	100.6	2274.62	2274.62	1.79
021	11	147.4	116.8	69.9	103.4	103.4	4401.85	4401.85	3.60
021	12	138.7	119.9	69.9	100.7	100.7	2346.59	2346.58	3.73
022	13	146.7	125.8	69.9	86.8	86.8	95.28	95.28	0.27
022	14	145.8	107.2	69.9	74.4	73.4	4.33	5.46	0.06
022	15	141.4	107.5	69.9	74.4	74.4	5.49	5.48	0.06
022	16	149.8	118.7	69.9	87.8	87.8	119.64	119.63	0.65
022	17	140.7	103.9	69.9	76.4	75.5	7.10	8.76	0.19
022	18	147.0	122.4	69.9	82.9	82.9	39.00	38.99	0.12
022	19	136.1	108.0	69.9	76.4	76.4	8.70	8.69	0.11
022	20	146.1	112.0	69.9	80.0	79.0	15.84	19.72	0.28
022	21	141.1	110.0	69.9	78.2	77.7	12.27	14.21	0.20
022	22	147.1	119.8	69.9	82.5	82.5	35.28	35.27	0.05
031	23	148.9	124.6	69.9	86.2	86.2	82.80	82.79	0.17
031	24	148.8	125.6	69.9	93.1	93.1	406.69	406.69	0.70
031	25	149.0	128.7	69.9	93.8	93.8	474.80	474.79	1.13
031	26	148.1	132.7	69.9	97.9	97.9	1218.04	1218.03	2.00
031	27	147.8	134.1	69.9	97.4	97.4	1108.91	1108.90	0.38
031	28	149.1	138.8	69.9	102.3	102.3	3377.64	3377.64	1.03
031	29	133.3	100.8	69.9	75.0	73.6	4.60	6.23	0.05
031	30	146.8	111.6	69.9	80.5	79.0	15.90	22.28	0.19
031	31	139.6	109.2	69.9	78.1	76.5	8.88	12.95	0.10
031	32	147.5	111.1	69.9	80.5	79.1	16.04	22.25	0.18
031	33	141.5	121.3	69.9	83.2	81.7	29.48	41.66	0.18
031	34	143.0	125.0	69.9	84.8	83.1	40.79	60.24	0.11
031	35	145.0	108.5	69.9	79.0	77.3	10.80	15.91	0.12

041	36	149.6	136.0	69.9	95.5	95.5	709.91	709.91	1.14
041	37	148.5	139.0	69.9	98.7	98.7	1482.17	1482.16	1.83
041	38	148.6	131.4	69.9	99.8	99.8	1915.64	1915.64	2.77
041	39	141.7	120.4	69.9	96.1	96.1	821.18	821.17	2.05
041	40	149.0	136.2	69.9	99.3	99.3	1697.25	1697.24	2.45
041	41	147.0	126.6	69.9	97.4	97.4	1087.71	1087.70	3.79
042	42	147.7	130.0	69.9	92.2	92.2	330.55	330.55	1.51
042	43	147.7	110.5	69.9	85.2	85.2	65.45	65.44	1.13
042	44	144.1	118.3	69.9	89.5	89.5	177.99	177.99	0.30
042	45	148.3	116.8	69.9	90.1	90.1	203.79	203.78	1.27
042	46	147.7	113.2	69.9	89.0	89.0	157.16	157.16	1.29
091	47	146.7	124.0	69.9	95.3	95.2	657.18	680.01	1.99
091	48	149.2	129.1	69.9	110.4	110.3	21185.30	21757.20	3.17
091	49	146.9	107.3	69.9	72.4	69.5	1.76	3.46	0.01
091	50	145.2	104.1	69.9	71.6	71.6	2.87	2.86	0.02
091	51	146.3	105.8	69.9	73.2	73.2	4.13	4.13	0.02
091	52	133.8	104.3	69.9	74.5	74.5	5.65	5.64	0.05
091	53	146.8	113.0	69.9	83.4	83.4	43.80	43.79	0.52
091	54	147.1	111.9	69.9	76.7	76.6	9.06	9.22	0.08
091	55	148.9	119.6	69.9	85.4	85.4	68.88	68.87	0.71
091	56	133.0	103.3	69.9	87.3	86.9	98.02	106.42	2.65
091	57	141.0	122.1	69.9	95.7	94.7	583.45	749.45	0.76
091	58	147.3	113.5	69.9	86.7	85.9	77.04	92.27	1.90
131	59	148.9	110.0	69.9	79.2	78.8	15.25	16.66	0.17
131	60	180.4	135.5	69.9	104.2	103.9	4917.74	5251.03	3.25
131	61	147.2	112.9	69.9	77.9	77.6	11.40	12.40	0.05
131	62	149.1	113.9	69.9	95.3	94.9	621.35	673.17	5.32
131	63	146.9	114.6	69.9	80.6	79.6	18.28	22.89	0.07
131	64	149.3	134.5	69.9	100.2	99.5	1777.01	2100.54	4.25
131	65	148.2	123.4	69.9	84.7	83.7	46.72	58.89	0.07
131	66	146.1	112.2	69.9	93.4	92.7	367.50	436.64	4.47
169	67	137.0	108.2	69.9	75.9	75.4	6.92	7.82	0.05
169	68	148.6	116.3	69.9	79.6	79.0	15.90	18.01	0.13
169	69	148.4	115.9	69.9	92.4	91.8	303.37	344.02	0.75
169	70	149.3	129.0	69.9	92.7	92.1	325.70	370.63	0.10
169	71	135.5	105.0	69.9	73.6	73.1	4.08	4.59	0.01
169	72	148.2	112.0	69.9	77.6	77.0	9.89	11.38	0.06
170	73	148.4	114.4	69.9	80.5	80.0	19.88	22.35	0.16

170	74	147.8	110.9	69.9	78.7	78.1	13.02	14.68	0.11
170	75	148.1	119.5	69.9	92.3	91.7	293.59	337.80	0.17
170	76	145.1	111.0	69.9	79.6	79.0	15.76	18.19	0.24
215	77	148.9	130.5	69.9	104.7	104.5	5640.30	5872.54	1.84
215	78	147.1	111.1	69.9	77.4	77.2	10.52	10.91	0.07
215	79	143.1	109.4	69.9	77.9	77.9	12.36	12.36	0.14
215	80	142.6	108.4	69.9	79.4	79.4	17.46	17.46	0.24
215	81	139.7	100.3	69.9	79.4	79.4	17.49	17.49	0.30
215	82	146.4	114.7	69.9	77.9	77.9	12.32	12.31	0.06
215	83	146.3	106.9	69.9	79.6	79.6	18.39	18.39	0.25
215	84	146.5	116.4	69.9	81.8	81.8	29.94	29.94	0.18
215	85	140.1	108.2	69.9	82.6	82.6	36.09	36.08	0.66
215	86	180.4	125.9	69.9	98.8	98.8	1526.23	1526.22	0.62
215	87	145.3	125.4	69.9	84.4	84.4	54.67	54.67	0.22
215	88	179.8	124.0	69.9	98.9	98.9	1550.75	1550.75	0.98
21A	89	148.7	121.5	69.9	94.2	94.2	518.91	518.90	2.00
21A	90	180.4	119.4	69.9	93.5	93.5	444.26	444.26	2.04
21A	91	149.1	123.3	69.9	92.6	92.6	361.02	361.01	2.09
226	92	144.4	106.3	69.9	77.0	77.0	10.11	10.10	0.05
226	93	143.2	127.0	69.9	94.2	94.2	529.97	529.97	1.66
226	94	140.2	104.5	69.9	69.8	69.6	1.82	1.89	0.01
226	95	147.7	110.2	69.9	72.2	72.0	3.19	3.29	0.02
226	96	147.7	115.4	69.9	74.6	74.6	5.77	5.77	0.02
226	97	147.6	113.9	69.9	96.0	96.0	790.57	790.56	4.83
226	98	147.3	109.4	69.9	79.8	79.8	19.03	19.03	0.17
226	99	143.5	120.4	69.9	81.6	81.6	28.73	28.73	0.05
226	100	144.6	115.4	69.9	80.7	80.7	23.50	23.49	0.22
227	101	144.7	111.7	69.9	78.5	78.3	13.59	14.00	0.18
227	102	145.9	113.4	69.9	76.7	75.9	7.74	9.28	0.06
227	103	139.6	109.0	69.9	77.0	76.2	8.30	9.89	0.08
227	104	142.9	107.3	69.9	78.1	77.2	10.44	12.77	0.10
22A	105	136.5	119.7	69.9	99.1	99.1	1608.74	1608.74	2.28
22A	106	143.0	114.2	69.9	98.7	98.7	1487.64	1487.64	2.43
23	107	148.9	125.2	69.9	90.0	90.0	199.04	199.04	0.56
23	108	147.7	128.1	69.9	94.6	94.6	582.16	582.16	0.78
23	109	148.7	120.8	69.9	82.0	81.1	25.79	31.37	0.03
23	110	145.9	108.9	69.9	75.8	74.8	5.99	7.62	0.07
23	111	146.9	107.0	69.9	74.0	72.7	3.73	5.02	0.04

434	150	149.9	130.3	69.9	92.6	92.5	354.42	361.00	0.08
441	151	146.3	110.3	69.9	83.9	83.8	48.13	49.32	0.67
441	152	148.0	114.7	69.9	75.2	75.1	6.41	6.56	0.03
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

651	188	136.7	101.1	69.9	74.1	74.0	5.01	5.14	0.07
651	189	146.8	117.4	69.9	83.8	83.6	46.00	47.45	0.29
651	190	140.3	103.5	69.9	75.6	75.6	7.17	7.16	0.06
651	191	146.5	113.1	69.9	79.2	79.1	16.18	16.42	0.11
711	192	143.5	107.1	69.9	77.3	76.9	9.70	10.64	0.07
711	193	141.6	106.1	69.9	75.2	74.5	5.57	6.65	0.06
737	194	147.7	111.3	69.9	84.9	84.8	60.11	61.26	0.54
737	195	146.4	124.5	69.9	87.0	86.5	88.65	99.37	0.76
737	196	134.6	110.1	69.9	82.0	80.0	20.17	31.74	0.26
737	197	148.2	113.7	69.9	78.0	77.7	11.69	12.57	0.09
737	198	141.1	110.3	69.9	76.0	75.6	7.24	7.84	0.06
737	199	145.9	111.6	69.9	79.3	77.5	11.25	17.16	0.12
737	200	142.4	113.0	69.9	80.8	80.4	21.87	23.96	0.34
737	201	146.5	111.5	69.9	76.9	76.4	8.64	9.69	0.07
737	202	147.9	130.0	69.9	94.3	94.2	521.44	541.31	0.26
737	203	147.6	107.5	69.9	72.8	72.7	3.75	3.82	0.02
737	204	141.0	109.2	69.9	73.5	72.8	3.84	4.49	0.02
737	205	147.4	110.9	69.9	75.7	75.5	7.00	7.47	0.04
83	206	148.6	116.0	69.9	77.2	77.2	10.49	10.48	0.02
83	207	149.0	124.6	69.9	94.6	94.6	571.67	571.66	0.32
83	208	149.3	115.1	69.9	78.8	78.8	15.04	15.16	0.04
83	209	146.7	105.4	69.9	74.1	74.1	5.13	5.12	0.05
861	210	143.5	105.7	69.9	80.8	80.8	23.78	23.78	0.37
861	211	134.2	110.0	69.9	86.5	86.4	86.86	89.20	1.59
861	212	143.7	111.9	69.9	80.4	80.3	21.55	22.00	0.33
861	213	139.9	108.4	69.9	81.9	81.9	30.62	31.01	0.43
861	214	141.5	116.7	69.9	84.4	84.4	55.46	55.46	0.69
861	215	148.8	115.5	69.9	83.5	83.5	44.86	44.86	0.59
861	216	136.5	105.3	69.9	79.7	79.7	18.52	18.67	0.26
861	217	137.3	106.8	69.9	83.9	83.8	48.35	48.86	0.79
861	218	139.8	109.7	69.9	83.3	83.2	42.04	42.30	0.74
911	219	141.7	113.7	69.9	81.1	81.1	25.46	25.95	0.37
911	220	148.2	115.6	69.9	80.9	80.8	24.26	24.41	0.20
911	221	147.6	117.6	69.9	79.8	79.7	18.81	19.07	0.12
911	222	148.7	127.0	69.9	93.4	93.4	434.14	438.64	0.35
911	223	143.1	106.4	69.9	76.4	76.3	8.49	8.69	0.06
911	224	146.5	112.9	69.9	78.6	78.5	14.13	14.29	0.09
911	225	147.0	113.5	69.9	77.2	77.1	10.31	10.58	0.08

921	226	137.1	104.7	69.9	75.4	75.3	6.71	6.89	0.09
921	227	149.0	111.6	69.9	77.7	77.7	11.72	11.86	0.11
921	228	141.6	107.1	69.9	79.5	79.4	17.51	17.98	0.23
921	229	137.5	106.0	69.9	70.5	70.4	2.21	2.24	0.01
933	230	148.1	111.7	69.9	77.9	77.9	12.18	12.39	0.10
933	231	144.3	107.6	69.9	71.7	71.7	2.98	2.98	0.01
933	232	133.4	111.0	69.9	80.5	80.5	22.36	22.35	0.30
933	233	149.8	113.4	69.9	79.7	79.7	18.67	18.67	0.14
933	234	147.4	113.7	69.9	89.6	89.6	183.52	183.52	2.35
933	235	149.0	110.9	69.9	77.4	77.4	10.88	10.88	0.13
933	236	142.6	107.9	69.9	73.9	73.9	4.90	4.90	0.04
933	237	146.6	111.0	69.9	75.6	75.6	7.19	7.18	0.05
933	238	148.0	128.6	69.9	94.9	94.5	559.91	614.79	5.36
935	239	148.8	134.8	69.9	93.3	92.9	390.48	427.47	0.94
935	240	149.1	118.5	69.9	86.7	86.3	85.04	92.68	0.31
935	241	141.3	112.0	69.9	81.2	81.2	26.07	26.41	0.33
935	242	145.5	110.2	69.9	82.7	82.7	37.12	37.11	0.64
935	243	141.2	108.7	69.9	82.4	82.4	34.59	34.71	0.59
935	244	148.7	121.5	69.9	91.0	91.0	249.87	252.15	0.46
935	245	143.9	103.7	69.9	80.0	79.9	19.53	20.06	0.30
935	246	148.5	117.1	69.9	85.8	85.8	76.40	76.39	0.83
935	247	146.4	111.2	69.9	81.4	81.4	27.41	27.76	0.26
935	248	146.5	111.6	69.9	80.5	80.0	20.18	22.46	0.22
935	249	147.8	114.2	69.9	82.1	81.5	28.27	32.58	0.38
935	250	140.7	115.3	69.9	86.3	85.9	77.30	85.23	0.65
935	251	148.4	123.2	69.9	90.7	90.7	233.60	236.48	1.64
935	252	146.9	123.3	69.9	88.3	88.3	133.47	133.91	0.81
935	253	135.3	105.5	69.9	82.3	82.2	33.24	33.51	0.42
935	254	149.4	116.9	69.9	85.8	85.7	74.65	75.75	0.95
935	255	149.1	116.5	69.9	83.2	83.2	41.66	41.93	0.34
935	256	147.6	109.2	69.9	78.7	78.7	14.90	14.90	0.19
935	257	149.1	112.3	69.9	80.7	80.7	23.65	23.65	0.35
935	258	144.3	126.2	69.9	88.3	88.3	135.43	135.42	0.16

APPENDIX F:
Dosimeter Two: Case Summaries

Dosimeter 2: Case Summaires

MOC	Subject #	Maximum Level (dBA)	Minimum Level (dBA)	Average Sound Level (LAVG) (dBA)	Time Weighted Average (TWA) (dBA)	Dose (%)	Projected 8-Hour Dose (%)	Upper Limit Time (hours)
011	1	115.4	69.9	93.0	93.0	150.66	150.65	0.00
011	2	121.4	69.9	92.9	92.9	150.31	150.30	0.00
011	3	135.0	69.9	94.0	94.0	175.14	175.13	0.00
011	4	122.3	69.9	88.3	88.3	78.48	78.48	0.00
011	5	122.1	69.9	92.6	92.6	143.18	143.18	0.00
021	6	118.5	69.9	95.4	95.4	212.26	212.26	0.00
021	7	116.1	69.9	95.4	95.4	211.95	211.94	0.00
021	8	124.8	69.9	89.8	89.8	96.85	96.85	0.00
021	9	115.9	69.9	97.8	97.8	294.42	294.41	0.00
021	10	131.1	69.9	94.9	94.9	197.75	197.74	0.00
021	11	116.8	69.9	98.3	98.3	316.65	316.64	0.00
021	12	119.9	69.9	96.4	96.4	242.70	242.69	0.00
022	13	125.8	69.9	75.2	75.2	12.92	12.91	0.00
022	14	107.2	69.9	62.5	60.8	1.76	2.21	0.00
022	15	107.5	69.9	61.8	61.8	2.01	2.00	0.00
022	16	118.7	69.9	79.0	79.0	21.67	21.66	0.00
022	17	103.9	69.9	66.5	65.0	3.13	3.87	0.00
022	18	122.4	69.9	70.7	70.7	6.84	6.84	0.00
022	19	108.0	69.9	65.9	65.9	3.53	3.53	0.00
022	20	112.0	69.9	70.3	68.8	5.26	6.55	0.00
022	21	110.0	69.9	68.1	67.4	4.40	5.04	0.00
022	22	119.8	69.9	64.7	64.7	3.00	2.99	0.00
031	23	124.6	69.9	71.8	71.8	7.97	7.97	0.00
031	24	125.6	69.9	82.1	82.1	33.44	33.43	0.00
031	25	128.7	69.9	84.5	84.5	46.33	46.33	0.00
031	26	132.7	69.9	87.8	87.8	74.15	74.15	0.01
031	27	134.1	69.9	84.3	84.3	45.25	45.24	0.01
031	28	138.8	69.9	89.2	89.2	89.08	89.08	0.02
031	29	100.8	69.9	64.8	62.6	2.23	3.03	0.00
031	30	111.6	69.9	72.2	69.8	6.04	8.47	0.00
031	31	109.2	69.9	68.6	65.9	3.52	5.14	0.00
031	32	111.1	69.9	70.9	68.5	5.07	7.02	0.00
031	33	121.3	69.9	72.8	70.3	6.55	9.26	0.00
031	34	125.0	69.9	70.7	67.9	4.66	6.88	0.00
031	35	108.5	69.9	71.2	68.4	5.03	7.40	0.00

041	36	136.0	69.9	82.7	82.7	36.11	36.10	0.00
041	37	139.0	69.9	89.9	89.9	98.21	98.21	0.00
041	38	131.4	69.9	94.3	94.3	180.53	180.52	0.01
041	39	120.4	69.9	91.2	91.2	117.54	117.53	0.00
041	40	136.2	69.9	93.4	93.4	161.10	161.09	0.00
041	41	126.6	69.9	93.6	93.6	165.50	165.49	0.00
042	42	130.0	69.9	85.9	85.9	57.00	56.99	0.00
042	43	110.5	69.9	81.4	81.4	30.50	30.50	0.00
042	44	118.3	69.9	78.4	78.4	20.11	20.10	0.00
042	45	116.8	69.9	84.1	84.1	44.40	44.39	0.00
042	46	113.2	69.9	84.7	84.7	48.04	48.04	0.00
091	47	124.0	69.9	90.2	90.0	99.53	102.99	0.00
091	48	129.1	69.9	105.4	105.2	819.80	841.93	0.26
091	49	107.3	69.9	56.1	51.2	0.46	0.90	0.00
091	50	104.1	69.9	56.8	56.8	1.00	1.00	0.00
091	51	105.8	69.9	57.9	57.9	1.17	1.16	0.00
091	52	104.3	69.9	62.4	62.4	2.19	2.19	0.00
091	53	113.0	69.9	73.7	73.7	10.47	10.46	0.00
091	54	111.9	69.9	64.5	64.3	2.85	2.89	0.00
091	55	119.6	69.9	75.5	75.5	13.43	13.43	0.00
091	56	103.3	69.9	86.0	85.4	52.92	57.45	0.00
091	57	122.1	69.9	87.6	85.8	55.87	71.77	0.00
091	58	113.5	69.9	85.0	83.7	41.94	50.23	0.00
131	59	110.0	69.9	71.0	70.4	6.57	7.17	0.00
131	60	135.5	69.9	92.9	92.4	139.53	148.99	0.01
131	61	112.9	69.9	62.4	61.7	1.99	2.17	0.00
131	62	113.9	69.9	93.3	92.7	145.40	157.52	0.00
131	63	114.6	69.9	66.5	64.9	3.08	3.86	0.00
131	64	134.5	69.9	94.5	93.3	156.97	185.54	0.00
131	65	123.4	69.9	69.3	67.6	4.50	5.66	0.00
131	66	112.2	69.9	91.5	90.3	104.18	123.77	0.00
169	67	108.2	69.9	64.3	63.4	2.52	2.84	0.00
169	68	116.3	69.9	69.2	68.3	4.92	5.56	0.00
169	69	115.9	69.9	84.7	83.8	42.23	47.89	0.00
169	70	129.0	69.9	77.0	76.1	14.56	16.56	0.00
169	71	105.0	69.9	58.7	57.8	1.16	1.30	0.00
169	72	112.0	69.9	67.2	66.2	3.68	4.24	0.00
170	73	114.4	69.9	69.5	68.7	5.20	5.85	0.00
170	74	110.9	69.9	68.1	67.3	4.27	4.82	0.00
170	75	119.5	69.9	78.9	77.9	18.65	21.46	0.00
170	76	111.0	69.9	71.9	70.9	7.07	8.16	0.00
215	77	130.5	69.9	97.8	97.5	282.38	294.00	0.04
215	78	111.1	69.9	66.0	65.8	3.48	3.60	0.00
215	79	109.4	69.9	69.6	69.6	5.95	5.94	0.00
215	80	108.4	69.9	71.7	71.7	7.89	7.88	0.00

215	81	100.3	69.9	72.4	72.4	8.75	8.75	0.00
215	82	114.7	69.9	65.0	65.0	3.14	3.14	0.00
215	83	106.9	69.9	72.0	72.0	8.28	8.28	0.00
215	84	116.4	69.9	69.6	69.6	5.91	5.90	0.00
215	85	108.2	69.9	76.3	76.3	14.97	14.96	0.00
215	86	125.9	69.9	88.1	88.1	77.34	77.34	0.02
215	87	125.4	69.9	73.1	73.1	9.56	9.56	0.00
215	88	124.0	69.9	90.7	90.7	110.73	110.72	0.00
21A	89	121.5	69.9	90.0	90.0	100.56	100.56	0.00
21A	90	119.4	69.9	89.7	89.7	96.26	96.25	0.00
21A	91	123.3	69.9	89.1	89.1	88.82	88.81	0.00
226	92	106.3	69.9	69.5	69.5	5.82	5.82	0.00
226	93	127.0	69.9	86.1	86.1	58.37	58.37	0.00
226	94	104.5	69.9	50.5	50.2	0.40	0.42	0.00
226	95	110.2	69.9	55.8	55.5	0.84	0.86	0.00
226	96	115.4	69.9	57.2	57.2	1.07	1.06	0.00
226	97	113.9	69.9	92.5	92.5	140.81	140.80	0.00
226	98	109.4	69.9	72.7	72.7	9.03	9.03	0.00
226	99	120.4	69.9	66.9	66.9	4.09	4.09	0.00
226	100	115.4	69.9	72.2	72.2	8.43	8.42	0.00
227	101	111.7	69.9	67.9	67.6	4.51	4.63	0.00
227	102	113.4	69.9	64.5	63.2	2.44	2.92	0.00
227	103	109.0	69.9	66.1	64.9	3.06	3.65	0.00
227	104	107.3	69.9	69.7	68.3	4.91	6.00	0.00
22A	105	119.7	69.9	94.1	94.1	177.77	177.76	0.00
22A	106	114.2	69.9	93.8	93.8	168.85	168.85	0.00
23	107	125.2	69.9	79.3	79.3	22.60	22.59	0.00
23	108	128.1	69.9	83.2	83.2	38.94	38.93	0.01
23	109	120.8	69.9	63.2	61.8	2.01	2.45	0.00
23	110	108.9	69.9	64.5	62.8	2.30	2.92	0.00
23	111	107.0	69.9	61.5	59.3	1.42	1.90	0.00
31D	112	127.7	69.9	99.4	99.4	365.62	368.33	0.01
31D	113	105.8	69.9	60.4	60.4	1.65	1.65	0.00
31D	114	127.3	69.9	65.2	65.2	3.21	3.23	0.00
31D	115	112.1	69.9	57.9	57.5	1.10	1.17	0.00
31D	116	113.7	69.9	88.5	87.9	74.54	81.51	0.00
31D	117	129.6	69.9	100.0	98.8	336.71	400.20	0.02
32A	118	126.3	69.9	101.4	101.4	484.90	484.89	0.16
32A	119	115.0	69.9	78.1	78.1	19.16	19.16	0.00
32A	120	109.2	69.9	59.0	59.0	1.36	1.35	0.00
32A	121	124.8	69.9	90.7	90.0	99.82	110.43	0.01
32A	122	113.9	69.9	87.4	86.7	63.31	69.44	0.00
32A	123	108.3	69.9	72.1	71.4	7.55	8.41	0.00

32A	124	110.3	69.9	86.0	84.7	48.00	57.62	0.00
32A	125	123.9	69.9	95.7	94.4	182.78	219.75	0.01
32A	126	106.8	69.9	81.5	79.8	24.27	30.86	0.00
39	127	108.3	69.9	72.2	71.1	7.30	8.42	0.00
39	128	108.4	69.9	62.8	61.9	2.03	2.30	0.00
39	129	130.4	69.9	98.3	97.5	281.56	317.56	0.02
39	130	123.2	69.9	66.1	65.2	3.20	3.62	0.00
39	131	108.3	69.9	69.0	68.1	4.83	5.42	0.00
39	132	114.5	69.9	82.6	81.7	31.57	35.97	0.00
39	133	124.8	69.9	71.6	70.7	6.92	7.84	0.00
411	134	112.2	69.9	74.6	74.4	11.54	11.82	0.00
411	135	112.2	69.9	75.5	75.3	12.95	13.39	0.00
411	136	112.7	69.9	75.6	75.4	13.25	13.55	0.00
411	137	111.4	69.9	72.7	72.7	9.11	9.10	0.00
411	138	122.0	69.9	82.7	82.6	35.73	36.46	0.00
411	139	108.3	69.9	71.0	70.7	6.86	7.22	0.00
411	140	120.2	69.9	86.2	86.2	58.71	59.28	0.00
411	141	135.4	69.9	80.4	80.4	26.49	26.48	0.00
411	142	109.9	69.9	77.9	77.8	18.48	18.66	0.00
411	143	112.2	69.9	73.5	73.4	10.01	10.20	0.00
411	144	130.1	69.9	99.4	99.3	362.71	367.87	0.03
42	145	119.3	69.9	71.8	71.8	8.01	8.01	0.00
42	146	99.5	69.9	68.1	68.1	4.79	4.79	0.00
421	147	116.3	69.9	66.6	65.5	3.37	3.88	0.00
421	148	107.3	69.9	73.4	73.4	10.03	10.03	0.00
421	149	111.7	69.9	67.7	67.5	4.39	4.52	0.00
434	150	130.3	69.9	74.0	73.9	10.66	10.86	0.00
441	151	110.3	69.9	77.7	77.6	17.81	18.24	0.00
441	152	114.7	69.9	59.9	59.7	1.50	1.54	0.00
441	153	112.7	69.9	83.6	83.4	40.03	41.41	0.00
441	154	109.8	69.9	76.4	76.3	14.97	15.24	0.00
514	155	113.4	69.9	77.2	76.9	16.23	16.93	0.00
514	156	113.1	69.9	78.7	77.9	18.76	20.85	0.00
514	157	110.1	69.9	68.7	68.7	5.20	5.19	0.00
514	158	104.8	69.9	63.9	63.9	2.68	2.67	0.00
514	159	119.9	69.9	79.0	78.4	19.90	21.72	0.00
514	160	104.5	69.9	72.5	72.5	8.80	8.79	0.00
514	161	126.5	69.9	75.3	75.3	12.98	12.97	0.00
514	162	132.1	69.9	95.7	95.7	221.14	221.13	0.03
514	163	117.9	69.9	62.7	62.7	2.28	2.27	0.00
526	164	118.9	69.9	69.3	69.0	5.47	5.68	0.00
526	165	105.8	69.9	62.6	62.3	2.15	2.23	0.00
526	166	111.2	69.9	71.3	71.0	7.17	7.45	0.00
526	167	122.6	69.9	92.3	92.3	137.66	137.65	0.00

861	212	111.9	69.9	72.6	72.4	8.73	8.90	0.00
861	213	108.4	69.9	75.4	75.3	13.08	13.23	0.00
8[illegible]26	21[illegible]68	11[illegible]7	6[illegible]9.9	7[illegible]2	7[illegible]1	19.[illegible]6	19.[illegible]9	0.00[illegible]0
8[illegible]26	21[illegible]69	11[illegible]4	6[illegible]9.9	7[illegible]4	7[illegible]4	17.[illegible]0	17.[illegible]0	0.00[illegible]0
8[illegible]26	21[illegible]70	10[illegible]6	6[illegible]9.9	7[illegible]4	7[illegible]3	8.[illegible]0	8.[illegible]8	0.00[illegible]0
8[illegible]26	21[illegible]71	10[illegible]9	6[illegible]9.9	7[illegible]9	7[illegible]6	20.[illegible]2	21.[illegible]7	0.00[illegible]0
8[illegible]26	21[illegible]72	10[illegible]2	6[illegible]9.9	7[illegible]0	7[illegible]0	21.[illegible]2	21.[illegible]2	0.00[illegible]0
9[illegible]26	21[illegible]73	11[illegible]9	6[illegible]9.9	7[illegible]6	7[illegible]6	10.[illegible]2	10.[illegible]1	0.00[illegible]0
9[illegible]26	22[illegible]74	11[illegible]8	6[illegible]9.9	7[illegible]3	7[illegible]3	9.[illegible]0	9.[illegible]0	0.00[illegible]0
91[illegible]65	22[illegible]75	11[illegible]0	6[illegible]9.9	6[illegible]3	6[illegible]3	4.[illegible]8	4.[illegible]8	0.00[illegible]0
9[illegible]65	22[illegible]76	12[illegible]1	6[illegible]9.9	8[illegible]1	8[illegible]7	26.[illegible]1	26.[illegible]1	0.00[illegible]0
9[illegible]65	22[illegible]77	10[illegible]7	6[illegible]9.9	6[illegible]3	6[illegible]2	1.[illegible]9	1.[illegible]1	0.00[illegible]2
9[illegible]65	22[illegible]78	11[illegible]8	6[illegible]9.9	6[illegible]5	6[illegible]3	3.[illegible]2	3.[illegible]1	0.00[illegible]0
9[illegible]65	22[illegible]79	11[illegible]1	6[illegible]9.9	6[illegible]0	6[illegible]7	2.[illegible]3	2.[illegible]3	0.00[illegible]0
9[illegible]65	22[illegible]80	10[illegible]2	6[illegible]9.9	6[illegible]5	6[illegible]0	3.[illegible]6	3.[illegible]5	0.00[illegible]0
9[illegible]65	22[illegible]81	11[illegible]8	6[illegible]9.9	6[illegible]5	6[illegible]4	4.[illegible]8	4.[illegible]3	0.00[illegible]0
9[illegible]65	22[illegible]82	10[illegible]9	6[illegible]9.9	7[illegible]9	7[illegible]7	8.[illegible]1	8.[illegible]1	0.00[illegible]0
9[illegible]65	22[illegible]83	10[illegible]0	6[illegible]9.9	5[illegible]3	5[illegible]3	0.[illegible]0	0.[illegible]9	0.00[illegible]0
93[illegible]65	23[illegible]84	11[illegible]7	6[illegible]9.9	6[illegible]9	6[illegible]8	3.[illegible]5	3.[illegible]3	0.00[illegible]0
93[illegible]51	23[illegible]85	10[illegible]4	6[illegible]9.9	5[illegible]4	5[illegible]2	0.[illegible]4	0.[illegible]6	0.00[illegible]0
93[illegible]51	23[illegible]86	11[illegible]2	6[illegible]9.9	7[illegible]2	7[illegible]0	8.[illegible]1	8.[illegible]3	0.00[illegible]0
93[illegible]51	23[illegible]87	11[illegible]9	6[illegible]9.9	6[illegible]7	6[illegible]5	5.[illegible]1	5.[illegible]4	0.00[illegible]0
93[illegible]51	23[illegible]88	11[illegible]1	6[illegible]9.9	8[illegible]0	8[illegible]8	53.[illegible]5	53.[illegible]3	0.00[illegible]0
93[illegible]51	23[illegible]89	11[illegible]4	6[illegible]9.9	6[illegible]5	6[illegible]3	3.[illegible]3	3.[illegible]4	0.00[illegible]0
93[illegible]51	23[illegible]90	10[illegible]5	6[illegible]9.9	6[illegible]0	6[illegible]0	1.[illegible]9	1.[illegible]9	0.00[illegible]0
93[illegible]51	23[illegible]91	11[illegible]1	6[illegible]9.9	6[illegible]2	6[illegible]1	2.[illegible]8	2.[illegible]3	0.00[illegible]0
93[illegible]11	23[illegible]92	12[illegible]1	6[illegible]9.9	9[illegible]0	9[illegible]3	125.[illegible]6	137.[illegible]3	0.00[illegible]0
93[illegible]11	23[illegible]93	13[illegible]1	6[illegible]9.9	8[illegible]6	8[illegible]3	29.[illegible]5	31.[illegible]6	0.00[illegible]0
93537	24[illegible]94	11[illegible]3	6[illegible]9.9	7[illegible]7	7[illegible]1	12.[illegible]2	13.[illegible]3	0.00[illegible]0
93537	24[illegible]95	11[illegible]5	6[illegible]9.9	7[illegible]9	7[illegible]6	9.[illegible]8	9.[illegible]5	0.00[illegible]0
93537	24[illegible]96	11[illegible]1	6[illegible]9.9	7[illegible]9	7[illegible]7	18.[illegible]5	18.[illegible]6	0.00[illegible]0
93537	24[illegible]97	10[illegible]7	6[illegible]9.9	7[illegible]6	7[illegible]5	13.[illegible]7	13.[illegible]6	0.00[illegible]0
93537	24[illegible]98	12[illegible]3	6[illegible]9.9	8[illegible]2	8[illegible]2	29.[illegible]9	29.[illegible]1	0.00[illegible]0
93537	24[illegible]99	10[illegible]6	6[illegible]9.9	7[illegible]3	7[illegible]2	8.[illegible]5	8.[illegible]7	0.00[illegible]0
93537	24[illegible]00	11[illegible]0	6[illegible]9.9	7[illegible]9	7[illegible]2	21.[illegible]4	21.[illegible]6	0.00[illegible]0
93537	24[illegible]01	11[illegible]5	6[illegible]9.9	7[illegible]6	7[illegible]6	8.[illegible]3	8.[illegible]0	0.00[illegible]0
93537	24[illegible]02	11[illegible]0	6[illegible]9.9	7[illegible]0	7[illegible]2	13.[illegible]5	13.[illegible]7	0.00[illegible]0
93537	24[illegible]03	11[illegible]5	6[illegible]9.9	7[illegible]4	7[illegible]7	10.[illegible]5	11.[illegible]6	0.00[illegible]0
93537	25[illegible]04	11[illegible]2	6[illegible]9.9	8[illegible]5	7[illegible]3	22.[illegible]1	25.[illegible]2	0.00[illegible]0
93537	25[illegible]05	12[illegible]9	6[illegible]9.9	8[illegible]2	8[illegible]7	50.[illegible]9	51.[illegible]8	0.00[illegible]0
9353[illegible]3	25[illegible]06	12[illegible]0	6[illegible]9.9	8[illegible]6	8[illegible]6	37.[illegible]2	37.[illegible]1	0.00[illegible]0
9353[illegible]3	25[illegible]07	10[illegible]6	6[illegible]9.9	7[illegible]2	7[illegible]2	23.[illegible]7	23.[illegible]6	0.00[illegible]0
9353[illegible]3	25[illegible]08	11[illegible]1	6[illegible]9.9	8[illegible]3	8[illegible]4	25.[illegible]9	26.[illegible]1	0.00[illegible]0
9353[illegible]3	25[illegible]09	11[illegible]5	6[illegible]9.9	7[illegible]1	7[illegible]1	11.[illegible]2	11.[illegible]1	0.00[illegible]0
93[illegible]61	25[illegible]10	10[illegible]7	6[illegible]9.9	6[illegible]3	6[illegible]3	6.[illegible]4	6.[illegible]3	0.00[illegible]0
93[illegible]61	25[illegible]11	11[illegible]0	6[illegible]9.9	7[illegible]0	7[illegible]8	7.[illegible]5	7.[illegible]5	0.00[illegible]0
935	258	126.2	69.9	74.2	74.2	11.23	11.22	0.00

APPENDIX G:
Dosimeter Three: Case Summaries

Dosimeter 3: Case Summaires

MOC	Subject #	Maximum Level (dBA)	Minimum Level (dBA)	Average Sound Level (LAVG) (dBA)	Time Weighted Average (TWA) (dBA)	Dose (%)	Projected 8-Hour Dose (%)	Upper Limit Time (hours)
011	1	115.4	69.9	96.0	96.0	1,250.72	1,250.72	0.00
011	2	121.4	69.9	97.1	97.1	1,616.31	1,616.31	0.00
011	3	135.0	69.9	98.9	98.9	2,454.78	2,454.78	0.00
011	4	122.3	69.9	93.6	93.6	722.89	722.89	0.00
011	5	122.1	69.9	96.9	96.9	1,550.52	1,550.52	0.00
021	6	118.5	69.9	100.6	100.6	3,618.62	3,618.62	0.00
021	7	116.1	69.9	100.5	100.5	3,531.90	3,531.90	0.00
021	8	124.8	69.9	94.9	94.9	968.08	968.08	0.00
021	9	115.9	69.9	102.8	102.8	6,091.11	6,091.10	0.00
021	10	131.1	69.9	100.6	100.6	3,605.20	3,605.19	0.00
021	11	116.8	69.9	103.4	103.4	6,976.79	6,976.79	0.00
021	12	119.9	69.9	100.7	100.7	3,719.26	3,719.25	0.00
022	13	125.8	69.9	86.8	86.8	151.02	151.02	0.00
022	14	107.2	69.9	74.4	73.4	6.87	8.66	0.00
022	15	107.5	69.9	74.4	74.4	8.70	8.69	0.00
022	16	118.7	69.9	87.8	87.8	189.62	189.62	0.00
022	17	103.9	69.9	76.4	75.5	11.25	13.89	0.00
022	18	122.4	69.9	82.9	82.9	61.81	61.81	0.00
022	19	108.0	69.9	76.4	76.4	13.78	13.78	0.00
022	20	112.0	69.9	80.0	79.0	25.10	31.27	0.00
022	21	110.0	69.9	78.2	77.7	19.44	22.53	0.00
022	22	119.8	69.9	82.5	82.5	55.91	55.91	0.00
031	23	124.6	69.9	86.2	86.2	131.23	131.22	0.00
031	24	125.6	69.9	93.1	93.1	644.59	644.59	0.00
031	25	128.7	69.9	93.8	93.8	752.54	752.54	0.00
031	26	132.7	69.9	97.9	97.9	1,930.55	1,930.55	0.00
031	27	134.1	69.9	97.4	97.4	1,757.58	1,757.58	0.00
031	28	138.8	69.9	102.3	102.3	5,353.45	5,353.44	0.00
031	29	100.8	69.9	75.0	73.6	7.29	9.88	0.00
031	30	111.6	69.9	80.5	79.0	25.20	35.31	0.00
031	31	109.2	69.9	78.1	76.5	14.07	20.53	0.00
031	32	111.1	69.9	80.5	79.1	25.42	35.27	0.00
031	33	121.3	69.9	83.2	81.7	46.73	66.02	0.00
031	34	125.0	69.9	84.8	83.1	64.65	95.48	0.00

031	35	108.5	69.9	79.0	77.3	17.11	25.23	0.00
041	36	136.0	69.9	95.5	95.5	1,125.19	1,125.18	0.00
041	37	139.0	69.9	98.7	98.7	2,349.18	2,349.18	0.00
041	38	131.4	69.9	99.8	99.8	3,036.23	3,036.22	0.00
041	39	120.4	69.9	96.1	96.1	1,301.54	1,301.53	0.00
041	40	136.2	69.9	99.3	99.3	2,690.08	2,690.07	0.00
041	41	126.6	69.9	97.4	97.4	1,723.98	1,723.98	0.00
042	42	130.0	69.9	92.2	92.2	523.91	523.91	0.00
042	43	110.5	69.9	85.2	85.2	103.73	103.73	0.00
042	44	118.3	69.9	89.5	89.5	282.11	282.11	0.00
042	45	116.8	69.9	90.1	90.1	322.99	322.99	0.00
042	46	113.2	69.9	89.0	89.0	249.10	249.09	0.00
091	47	124.0	69.9	95.3	95.2	1,041.61	1,077.80	0.00
091	48	129.1	69.9	110.4	110.3	33,578.10	34,484.50	0.00
091	49	107.3	69.9	72.4	69.5	2.79	5.49	0.00
091	50	104.1	69.9	71.6	71.6	4.54	4.54	0.00
091	51	105.8	69.9	73.2	73.2	6.55	6.56	0.00
091	52	104.3	69.9	74.5	74.5	8.95	8.95	0.00
091	53	113.0	69.9	83.4	83.4	69.42	69.42	0.00
091	54	111.9	69.9	76.7	76.6	14.36	14.62	0.00
091	55	119.6	69.9	85.4	85.4	109.17	109.16	0.00
091	56	103.3	69.9	87.3	86.9	155.35	168.67	0.00
091	57	122.1	69.9	95.7	94.7	924.75	1,187.84	0.00
091	58	113.5	69.9	86.7	85.9	122.11	146.25	0.00
131	59	110.0	69.9	79.2	78.8	24.17	26.40	0.00
131	60	135.5	69.9	104.2	103.9	7,794.46	8,322.71	0.00
131	61	112.9	69.9	77.9	77.6	18.07	19.66	0.00
131	62	113.9	69.9	95.3	94.9	984.82	1,066.95	0.00
131	63	114.6	69.9	80.6	79.6	28.98	36.27	0.00
131	64	134.5	69.9	100.2	99.5	2,816.50	3,329.29	0.00
131	65	123.4	69.9	84.7	83.7	74.04	93.35	0.00
131	66	112.2	69.9	93.4	92.7	582.47	692.06	0.00
169	67	108.2	69.9	75.9	75.4	10.97	12.41	0.00
169	68	116.3	69.9	79.6	79.0	25.21	28.55	0.00
169	69	115.9	69.9	92.4	91.8	480.83	545.27	0.00
169	70	129.0	69.9	92.7	92.1	516.23	587.42	0.00
169	71	105.0	69.9	73.6	73.1	6.46	7.29	0.00
169	72	112.0	69.9	77.6	77.0	15.67	18.04	0.00
170	73	114.4	69.9	80.5	80.0	31.50	35.43	0.00
170	74	110.9	69.9	78.7	78.1	20.64	23.28	0.00
170	75	119.5	69.9	92.3	91.7	465.33	535.41	0.00
170	76	111.0	69.9	79.6	79.0	24.98	28.84	0.00
215	77	130.5	69.9	104.7	104.5	8,939.68	9,307.79	0.00
215	78	111.1	69.9	77.4	77.2	16.67	17.29	0.00

215	79	109.4	69.9	77.9	77.9	19.59	19.59	0.00
215	80	108.4	69.9	79.4	79.4	27.67	27.67	0.00
215	81	100.3	69.9	79.4	79.4	27.73	27.72	0.00
215	82	114.7	69.9	77.9	77.9	19.52	19.52	0.00
215	83	106.9	69.9	79.6	79.6	29.15	29.15	0.00
215	84	116.4	69.9	81.8	81.8	47.46	47.45	0.00
215	85	108.2	69.9	82.6	82.6	57.20	57.19	0.00
215	86	125.9	69.9	98.8	98.8	2,419.02	2,419.01	0.00
215	87	125.4	69.9	84.4	84.4	86.65	86.65	0.00
215	88	124.0	69.9	98.9	98.9	2,457.89	2,457.89	0.00
21A	89	121.5	69.9	94.2	94.2	822.45	822.45	0.00
21A	90	119.4	69.9	93.5	93.5	704.14	704.14	0.00
21A	91	123.3	69.9	92.6	92.6	572.20	572.19	0.00
226	92	106.3	69.9	77.0	77.0	16.02	16.02	0.00
226	93	127.0	69.9	94.2	94.2	839.99	839.98	0.00
226	94	104.5	69.9	69.8	69.6	2.88	2.99	0.00
226	95	110.2	69.9	72.2	72.0	5.05	5.23	0.00
226	96	115.4	69.9	74.6	74.6	9.15	9.14	0.00
226	97	113.9	69.9	96.0	96.0	1,253.03	1,253.02	0.00
226	98	109.4	69.9	79.8	79.8	30.16	30.16	0.00
226	99	120.4	69.9	81.6	81.6	45.54	45.53	0.00
226	100	115.4	69.9	80.7	80.7	37.24	37.24	0.00
227	101	111.7	69.9	78.5	78.3	21.55	22.18	0.00
227	102	113.4	69.9	76.7	75.9	12.27	14.72	0.00
227	103	109.0	69.9	77.0	76.2	13.15	15.70	0.00
227	104	107.3	69.9	78.1	77.2	16.54	20.24	0.00
22A	105	119.7	69.9	99.1	99.1	2,549.80	2,549.79	0.00
22A	106	114.2	69.9	98.7	98.7	2,357.86	2,357.86	0.00
23	107	125.2	69.9	90.0	90.0	315.47	315.47	0.00
23	108	128.1	69.9	94.6	94.6	922.71	922.70	0.00
23	109	120.8	69.9	82.0	81.1	40.87	49.74	0.00
23	110	108.9	69.9	75.8	74.8	9.50	12.07	0.00
23	111	107.0	69.9	74.0	72.7	5.91	7.98	0.00
31D	112	127.7	69.9	104.8	104.8	9,591.68	9,662.80	0.00
31D	113	105.8	69.9	73.3	73.3	6.79	6.79	0.00
31D	114	127.3	69.9	85.9	85.9	122.92	123.59	0.00
31D	115	112.1	69.9	73.9	73.7	7.38	7.83	0.00
31D	116	113.7	69.9	90.1	89.7	294.92	322.53	0.00
31D	117	129.6	69.9	105.4	104.6	9,209.18	10,946.10	0.00
32A	118	126.3	69.9	108.1	108.1	20,436.00	20,436.00	0.00
32A	119	115.0	69.9	87.0	87.0	158.40	158.39	0.00
32A	120	109.2	69.9	73.1	73.1	6.39	6.40	0.00
32A	121	124.8	69.9	100.0	99.5	2,832.32	3,133.71	0.00
32A	122	113.9	69.9	88.7	88.3	211.73	232.25	0.00

32A	123	108.3	69.9	81.4	80.9	38.80	43.22	0.00
32A	124	110.3	69.9	87.4	86.6	146.19	175.49	0.00
32A	125	123.9	69.9	102.5	101.7	4,668.20	5,612.35	0.00
32A	126	106.8	69.9	88.1	87.0	159.23	202.43	0.00
39	127	108.3	69.9	82.0	81.4	43.23	49.88	0.00
39	128	108.4	69.9	74.9	74.4	8.63	9.85	0.00
39	129	130.4	69.9	104.3	103.8	7,613.48	8,586.96	0.00
39	130	123.2	69.9	82.7	82.2	52.02	59.08	0.00
39	131	108.3	69.9	80.1	79.6	28.66	32.17	0.00
39	132	114.5	69.9	91.8	91.3	424.15	483.21	0.00
39	133	124.8	69.9	86.4	85.9	122.44	138.85	0.00
411	134	112.2	69.9	81.6	81.5	44.99	46.07	0.00
411	135	112.2	69.9	83.1	83.0	62.97	65.17	0.00
411	136	112.7	69.9	83.0	82.9	62.08	63.51	0.00
411	137	111.4	69.9	80.5	80.5	35.64	35.64	0.00
411	138	122.0	69.9	89.3	89.3	266.36	271.78	0.00
411	139	108.3	69.9	79.2	79.0	25.17	26.50	0.00
411	140	120.2	69.9	90.6	90.6	360.97	364.49	0.00
411	141	135.4	69.9	94.4	94.4	862.67	862.67	0.00
411	142	109.9	69.9	82.9	82.8	60.80	61.39	0.00
411	143	112.2	69.9	80.7	80.6	36.34	37.01	0.00
411	144	130.1	69.9	104.8	104.8	9,520.19	9,655.97	0.00
42	145	119.3	69.9	87.3	87.3	168.34	168.33	0.00
42	146	99.5	69.9	76.8	76.8	15.15	15.15	0.00
421	147	116.3	69.9	79.2	78.6	22.70	26.10	0.00
421	148	107.3	69.9	81.6	81.6	45.44	45.43	0.00
421	149	111.7	69.9	78.0	77.8	19.24	19.81	0.00
434	150	130.3	69.9	92.6	92.5	561.74	572.19	0.00
441	151	110.3	69.9	83.9	83.8	76.28	78.18	0.00
441	152	114.7	69.9	75.2	75.1	10.16	10.40	0.00
441	153	112.7	69.9	89.0	88.8	242.34	250.67	0.00
441	154	109.8	69.9	83.5	83.4	68.82	70.04	0.00
514	155	113.4	69.9	83.7	83.6	71.73	74.80	0.00
514	156	113.1	69.9	84.6	84.1	81.29	90.35	0.00
514	157	110.1	69.9	78.4	78.4	22.12	22.12	0.00
514	158	104.8	69.9	75.5	75.5	11.29	11.28	0.00
514	159	119.9	69.9	86.3	86.0	124.68	136.13	0.00
514	160	104.5	69.9	79.5	79.5	28.36	28.35	0.00
514	161	126.5	69.9	87.1	87.1	161.23	161.23	0.00
514	162	132.1	69.9	103.6	103.6	7,169.80	7,169.79	0.00
514	163	117.9	69.9	78.5	78.5	22.20	22.19	0.00
526	164	118.9	69.9	81.8	81.7	46.43	48.27	0.00
526	165	105.8	69.9	75.1	75.0	9.95	10.31	0.00
526	166	111.2	69.9	80.6	80.5	35.26	36.62	0.00

526	167	122.6	69.9	100.1	100.1	3,200.70	3,200.70	0.00
526	168	111.7	69.9	76.5	76.4	13.84	13.99	0.00
526	169	120.4	69.9	81.5	81.5	44.29	44.28	0.00
526	170	108.6	69.9	80.2	80.2	32.96	33.28	0.00
526	171	103.9	69.9	72.9	72.7	5.88	6.13	0.00
526	172	120.2	69.9	84.7	84.7	93.66	93.65	0.00
526	173	110.9	69.9	74.3	74.3	8.48	8.47	0.00
526	174	103.9	69.9	78.5	78.5	22.29	22.29	0.00
565	175	108.0	69.9	87.0	87.0	158.05	158.04	0.00
565	176	121.1	69.9	90.2	90.0	316.72	332.73	0.00
565	177	142.7	69.9	106.2	106.2	13,103.60	13,319.60	0.00
565	178	116.8	69.9	89.3	89.2	261.65	267.71	0.00
565	179	113.1	69.9	83.8	83.6	72.56	75.76	0.00
565	180	111.2	69.9	85.8	85.6	113.56	120.78	0.00
565	181	108.8	69.9	81.7	81.6	46.10	46.96	0.00
565	182	113.9	69.9	83.6	83.6	73.27	73.26	0.00
565	183	119.0	69.9	88.9	88.9	245.63	245.62	0.00
565	184	106.7	69.9	78.6	78.6	22.70	23.00	0.00
651	185	105.4	69.9	80.9	80.8	37.91	38.75	0.00
651	186	116.2	69.9	88.6	88.5	221.85	226.67	0.00
651	187	123.9	69.9	94.2	94.1	805.91	828.29	0.00
651	188	101.1	69.9	74.1	74.0	7.94	8.16	0.00
651	189	117.4	69.9	83.8	83.6	72.90	75.21	0.00
651	190	103.5	69.9	75.6	75.6	11.36	11.35	0.00
651	191	113.1	69.9	79.2	79.1	25.64	26.02	0.00
711	192	107.1	69.9	77.3	76.9	15.37	16.87	0.00
711	193	106.1	69.9	75.2	74.5	8.83	10.54	0.00
737	194	111.3	69.9	84.9	84.8	95.28	97.09	0.00
737	195	124.5	69.9	87.0	86.5	140.51	157.51	0.00
737	196	110.1	69.9	82.0	80.0	31.97	50.31	0.00
737	197	113.7	69.9	78.0	77.7	18.53	19.93	0.00
737	198	110.3	69.9	76.0	75.6	11.47	12.44	0.00
737	199	111.6	69.9	79.3	77.5	17.83	27.20	0.00
737	200	113.0	69.9	80.8	80.4	34.67	37.97	0.00
737	201	111.5	69.9	76.9	76.4	13.70	15.36	0.00
737	202	130.0	69.9	94.3	94.2	826.47	857.95	0.00
737	203	107.5	69.9	72.8	72.7	5.94	6.06	0.00
737	204	109.2	69.9	73.5	72.8	6.08	7.12	0.00
737	205	110.9	69.9	75.7	75.5	11.10	11.83	0.00
83	206	116.0	69.9	77.2	77.2	16.62	16.62	0.00
83	207	124.6	69.9	94.6	94.6	906.07	906.07	0.00
83	208	115.1	69.9	78.8	78.8	23.83	24.03	0.00
83	209	105.4	69.9	74.1	74.1	8.13	8.13	0.00
861	210	105.7	69.9	80.8	80.8	37.69	37.69	0.00

861	211	110.0	69.9	86.5	86.4	137.67	141.39	0.00
861	212	111.9	69.9	80.4	80.3	34.16	34.87	0.00
861	213	108.4	69.9	81.9	81.9	48.53	49.14	0.00
861	214	116.7	69.9	84.4	84.4	87.90	87.90	0.00
861	215	115.5	69.9	83.5	83.5	71.11	71.10	0.00
861	216	105.3	69.9	79.7	79.7	29.36	29.59	0.00
861	217	106.8	69.9	83.9	83.8	76.63	77.45	0.00
861	218	109.7	69.9	83.3	83.2	66.64	67.04	0.00
911	219	113.7	69.9	81.1	81.1	40.36	41.14	0.00
911	220	115.6	69.9	80.9	80.8	38.45	38.68	0.00
911	221	117.6	69.9	79.8	79.7	29.81	30.24	0.00
911	222	127.0	69.9	93.4	93.4	688.09	695.24	0.00
911	223	106.4	69.9	76.4	76.3	13.46	13.77	0.00
911	224	112.9	69.9	78.6	78.5	22.39	22.64	0.00
911	225	113.5	69.9	77.2	77.1	16.33	16.78	0.00
921	226	104.7	69.9	75.4	75.3	10.63	10.92	0.00
921	227	111.6	69.9	77.7	77.7	18.58	18.79	0.00
921	228	107.1	69.9	79.5	79.4	27.75	28.49	0.00
921	229	106.0	69.9	70.5	70.4	3.50	3.55	0.00
933	230	111.7	69.9	77.9	77.9	19.30	19.65	0.00
933	231	107.6	69.9	71.7	71.7	4.73	4.72	0.00
933	232	111.0	69.9	80.5	80.5	35.43	35.43	0.00
933	233	113.4	69.9	79.7	79.7	29.60	29.59	0.00
933	234	113.7	69.9	89.6	89.6	290.87	290.87	0.00
933	235	110.9	69.9	77.4	77.4	17.25	17.24	0.00
933	236	107.9	69.9	73.9	73.9	7.77	7.76	0.00
933	237	111.0	69.9	75.6	75.6	11.39	11.39	0.00
933	238	128.6	69.9	94.9	94.5	887.45	974.43	0.00
935	239	134.8	69.9	93.3	92.9	618.90	677.51	0.00
935	240	118.5	69.9	86.7	86.3	134.79	146.91	0.00
935	241	112.0	69.9	81.2	81.2	41.32	41.87	0.00
935	242	110.2	69.9	82.7	82.7	58.83	58.83	0.00
935	243	108.7	69.9	82.4	82.4	54.82	55.02	0.00
935	244	121.5	69.9	91.0	91.0	396.03	399.67	0.00
935	245	103.7	69.9	80.0	79.9	30.95	31.79	0.00
935	246	117.1	69.9	85.8	85.8	121.09	121.08	0.00
935	247	111.2	69.9	81.4	81.4	43.44	44.00	0.00
935	248	111.6	69.9	80.5	80.0	31.98	35.63	0.00
935	249	114.2	69.9	82.1	81.5	44.81	51.65	0.00
935	250	115.3	69.9	86.3	85.9	122.52	135.09	0.00
935	251	123.2	69.9	90.7	90.7	370.25	374.82	0.00
935	252	123.3	69.9	88.3	88.3	211.55	212.23	0.00
935	253	105.5	69.9	82.3	82.2	52.68	53.12	0.00
935	254	116.9	69.9	85.8	85.7	118.32	120.06	0.00
935	255	116.5	69.9	83.2	83.2	66.03	66.46	0.00
935	256	109.2	69.9	78.7	78.7	23.62	23.62	0.00
935	257	112.3	69.9	80.7	80.7	37.49	37.48	0.00
935	258	126.2	69.9	88.3	88.3	214.65	214.65	0.00

APPENDIX H:
Participant Information and Activities

Case Information and Activities

MOC	Sub. #	Base	Gender	Age	Hand-ness	Rank	Years of Service	Job	Duties	Equipment	Vehicles	Weapons	Rest Periods
011	1	PETAWAWA	M	30	.	Cpl	6	tank gunner	Maintain and fire the gunnery systems of rank, help rest of crew with maintenance		Leopard 1	CG coax mgs	engine noise
011	2	PETAWAWA	M	25	R	Cpl	4	Crew Man	Leopard tank gunner		Leopard tank	105mm and CE coax	
011	3	PETAWAWA	M	24	R	Cpl	4	Driver (tank)	To drive my tank by direction of crew commander	Leopard 1 C2 possible sledge hammer, hammer, truck, wrenches	Leopard 1 C2 (tank)	C-8	Sledge hammer hitting steel, engine noise
011	4	PETAWAWA	M	25	R	Cpl	7	Loader Tank	Load rounds into gun of tank and operate coax. Fixing tank if breaks	Coax, 105mm gun, tank	tank	coax, 105mm gun, 7.62 mm	tank running
011	5	PETAWAWA	M	20	L	Tpr	3	Armoured Crew Man	Tank Gunner	Thermal imagery system	Leopard C2 main battle tank	105mm main gun	yes, engine noise, main gun firing, thermal in use
021	6	PETAWAWA	M	26	R	Bdr	5.5	Gun number	Gunnery & maintenance	M109	M109		yes
021	7	PETAWAWA	M	29	L	Bdr	4	M109 gun driver	Gun #, M109 Driver	M109 self propelled howitzer	M109 self propelled howitzer		
021	8	PETAWAWA	M	26	R	Bdr	7.5	Number 1 on gun (Boss)	Deploy my gun in field, supervisor on gun, supervise fire of M109 order fire	M 109	M 109		yes
021	9	PETAWAWA	M	24	L	Bdr	5.5	CP Tech	Tech in Command Post. Driver		M577		
021	10	PETAWAWA	M	20	R	Gunner	2	Gun number	Gunnery & general duties	M 109	M 109		
021	11	PETAWAWA	M	42	R	MCpl	17	Artillery	Det Comd		M113 APC		Vehicles, radios
021	12	PETAWAWA	M	38	L	Sgt	21	Detachment Comd. M-109 self Propelled Howitzer	To conduct & supervise fire MSN within the Howitzer	M-109 Howitzer and all tools that is involved in it	M-109 Howitzer	M-109 .155mm gun	Always exposed to noise
022	13	PETAWAWA	M	28	R	Bdr	6	Briefing in morning					
022	14	PETAWAWA	M	26	.	Bdr	6	Jav Det Comd	Briefings in classroom	n/a	n/a	n/a	n/a
022	15	PETAWAWA	F	25	R	Bdr	5	TC's driver	Harassment Briefing, PT, sat in classroom				
022	16	PETAWAWA	M	30	R	Bdr	4	Gunner Operations	HA training, classroom, hockey	N/A	N/A	N/A	N/A
022	17	PETAWAWA	M	19	L	GNR	1	AD Arty GNR	Today to attend an HA meeting then go to hockey	N/A	N/A	N/A	
022	18	PETAWAWA	M	22	.	GNR	1	Air Defence Gunner	Harassment Briefing, Hockey	Pen	None	None	No
022	19	PETAWAWA	M	25	R	GNR	3	Briefings all morning & duty driver in the afternoon	Drive a LSVW around based whenever needed by Reg orderly room	N/A	SMP LSVW	N/A	N/A
022	20	PETAWAWA	M	21	R	Gunner	1	Javelin Operator	Harassment Training, Clean Up	none	none	none	none

022	21	PETAWAWA	M	28	R	MBdr	6	Detachment Commander	Hearing Test, Harassment Briefing				
022	22	PETAWAWA	M	38	R	MBdr	21	Battery Signals NCO	Attend Lectures	toilet sink	civ vehicles	nil	
031	23	PETAWAWA	M	24	R	2LT	6	A/LAV Capt	Monitor Comd post, observed the FIBUA tng (loud bangs)	radios	lltis		no
031	24	PETAWAWA	F	25	R	Cpl	4	Infantry HQ Gunner	LAV Gunnery / C7 riflemen assaulting in built up areas	C7, LAV II	HLVWs	C7 rifles, small explosives	C7 rifles, small explosives
031	25	PETAWAWA	M	30	R	Cpl	4	Rifleman & 3 I/C & M203 Gunner	Supervise Section, fill in a 2 I/C and fire rifle, ride in LAV III		LAV III	C-7 service rifle, M203 - no rounds	Blank rounds, grenade simulators, turbines, generators
031	26	PETAWAWA	M	33	R	MCpl	12	Section Commander	Lead section in battle simulation		LAV III	C7, C9	Blank rounds, grenade simulators (T-flash), turbines, generators
031	27	PETAWAWA	M	23	R	Pte	1	C9 Gunner	Participate in defending and offending FIBUA area	none	Passenger in LS	C9	C7 fire, C9, artillery simulation
031	28	PETAWAWA	M	21	R	Pte	1	Rifleman during fighting in built up areas, defense and attacks	Participated in defending a house and attacking a house	none	Passenger in HLVW to and from FIBUA site	C7 rifles, small explosives	no
031	29	PETAWAWA	M	24	R	2LT	4	Acting 2IC - B Coy	paper work	computer	nil	nil	car music
031	30	PETAWAWA	F	25	R	Cpl	4	Hq Gunner	Work on computer, get ID card made, waited to go home	computer	nil	nil	no
031	31	PETAWAWA	M	39	L	Cpl	13	PI Signaler	PT, clean stores, veh maint	none	Bison	no	no
031	32	PETAWAWA	M	23	R	Pte	1	CQ, Gunner	Maintain Toboggan	nil	nil	nil	no
031	33	PETAWAWA	M	21	R	Pte	1	Recce Patrolman	Maintenance on Coyote, check serial numbers, weapon maintenance	n/a	coyote	rifle (cleaning)	no
031	34	PETAWAWA	M	21	R	Pte	3	Infantier	Counted stores in CQ, locker security	none	none	none	no
031	35	PETAWAWA	M	36	R	Sgt		Supervisor	Maintenance supervision on veh, wpns, computer	computer, tools hand	M113 TVA not running	C7 cleaning, not firing	no

041	36	PETAWAWA	M	28	R	Cpl	11	Armoured Engineer	Driver / Operator	Leopard Bridge layer	Leopard Bridge layer	Nil	
041	37	PETAWAWA	M	29	R	Cpl	5	Section 2 I/C	Driving and riding in APC	M113 A1	M113 A1	.50 cal, M203, C7, tanks, LAV III	Yes, artillery, tanks, APC's, LAV IIIs. Bangalors, C4, Pers weapons
041	38	PETAWAWA	M	23	R	Sapper	2	Storeman (section), rifleman	Follow orders	M-113 SEV	M-113 SEV	C7	yes, M-113 SEV / AEV
041	39	PETAWAWA	M	22	R	Sapper	3	Section Member	Participating in combat team attacks, battle procedure (offloading pickets etc.)		M113, HLVW		6 Pickets smashing together
041	40	PETAWAWA	M	24	R	Spr	3	Field Section Member - C9 Gunner / Storman	Carry C9 LMG, care of section stores and kit. Driving heavy, light and medium trucks.	none	M113 SEV / HLVW	none	walking through maintenance bay
041	41	PETAWAWA	M	38	R	WO	17	Troop WO	Adm of a field troop	Radio 521	APC	N/A	No
042	42	PETAWAWA	M	39	R	Cpl	17	Crane Operator	Place crane for set up. Place bridge on set up		25 ton crane	nil	engine reeves
042	43	PETAWAWA	M	28	R	Cpl	8	Heavy Equipment Operator	Move earth	Excavator		nil	no rest
042	44	PETAWAWA	M	37	R	MCpl	18	Heavy Equipment Operator	Engineers Duties. Operator of truck loader, dozer grader, crane excavator, sae mill, chain saw	Chain saw, dump truck	HLVW PLS, chain saw		Chain saw
042	45	PETAWAWA	M	39	R	Cpl	17	Keetna Bridge	Excavator Operator, Loader Operator	Excavator, Loader	Excavator, Loader	nil	no
042	46	PETAWAWA	M	29	L	Cpl	7	Heavy Equipment Operator	Excavator Operator	Excavator, HESV (Dump Truck)	HESV (Dump Truck)	nil	Excavator at high RPM's
091	47	BORDEN	M	39	L	MCpl	22	Flight Engineer	Flight this morning, office work	helicopter, computer	none	none	none
091	48	BORDEN	M	40	R	MCpl	15	Flight Engineer instructor	Work in office till 1130, luch til 1200, briefed with student till 1300, flight in Griffen		CH 146 Griffen	no	what rest
091	49	TRENTON	M	46	R	Sgt	27	training FE	monitor training other CC-130 FEs. Office work.	none	none	none	no
091	50	TRENTON	M	47	R	WO	30	Flight Engineer	Line Flight Engineer & Office worker		POMV	n/a	
091	51	TRENTON	M	44	R	MWO	26	Flt Eng Leader	Day to day management of 17 Flt Eng. Minimal flying duties with this job	nil	personal	nil	nil
091	52	TRENTON	M	41	R	Sgt	19	flight engineer	flight engineer scheduler for this week 12-16 mat (desk duty)	none	none	none	none
091	53	TRENTON	M	56	R	Sgt	32	Flight Engineer - C130	Maintenance and flying duties on C130	Flying C130 Hercules as 14:50 - 18:00			

091	54	TRENTON	M	42	L	Sgt	25	Scheduler	answer phone, planning, scheduling flts	phone, pen	noen	none	airplane taxi by during the day anytime
091	55	TRENTON	M	40	R	Sgt	18	Flight Engineer	Fly aboard CC130	Engine bay, flying CC130 starting at 14:50-18:00	n/a	n/a	
091	56	TRENTON	M	44	R	WO	23	Flight Engineer CC-130	5.5 hours of flying	APU, ground power unit, aircraft	ground power usints		airport activity during lunch
091	57	TRENTON	M	44	R	Sgt	20	Flight Engineer	on board aircrew & hoist operator ot CH113 Labrador. 0.8 hrs flying time		CH113 Labrador		
091	58	TRENTON	M	42	R	Sgt	25	Flight Engineer	Aircraft first line maintenance & servicing checks on board system monitoring and analysis	ground power	CC130 Hercules	nil	no
131	59	TRENTON	M			Sgt		Search & Rescue on Lab Helicopter	day spent in hanger area - no flying today				
131	60	TRENTON	M	33	R	Cpl	12	SAR Tech	Loaded aircraft transit to Bromont, open ramp and door work, removed from 1100-1130 for jump, ERO, Bromont, transit to Quebec City, lunch, transit back to Trenton. 9-11, 1130-1200, 1200-1600				yes, CC130
131	61	TRENTON	M	32	R	MCpl	12	Mountain rescue systems in SAR tech shop	no flying today				
131	62	TRENTON	M	40	R	Sgt	21	SAR Tech Leader	Team leader aboard the CC130 Herc 0900to1030 left hand spotters window. 1030to1100 dispatching equipment of the rand. 1100 recorder removed for para jump. 1130 recorder back on		CC130 Her		yes - flight ling activity ie running aircraft
131	63	TRENTON	M	39	R	Cpl	20	SAR Tech	Packing parachutes, medical trg, lunch, packing parachutes				
131	64	TRENTON	M	28	R	Cpl	9	Search & Rescue Training	Work on open ramp of flying aircraft, dispatch of equipment, parachute(Pembroke), simulated pumps skad, parachute (Trenton)	C-SAR-4 Parachute	CC-130 Hercules		lunch time, airfield noise
131	65	TRENTON	M	48	L	Sgt	25	SAR Tech	Office admin				
131	66	TRENTON	M	41	R	Sgt	23	SAR Tech	spotter, dispatch equipment, jump		CC130 Hercules		no
169	67	TRENTON	M	37	R	Capt	13	Air Traffic Control	Duty air traffic controller	radios, radar, phone, computer		none	
169	68	TRENTON	M	34	R	Cpl	7						
169	69	TRENTON	F	36	R	Cpl	6	Ground control	controlling ground traffic	radios	n/a	n/a	
169	70	TRENTON	F	41	L	Sgt	19	Ground control	control vehicles	nil	section truck	nil	

169	71	TRENTON	M	28	R	Pte	14						
169	72	TRENTON	M	48	R	Sgt	30	ground control	runway inspection, morning briefing. Ground control - radio communication	tower vehicle, tower radios	pick-up	nil	
170	73	TRENTON	M	40	R	Cpl	18						
170	74	TRENTON	F	38	L	Sgt	21	ATC/Rdr controller	Control aircraft on final approach. Coordinated with several agencies. Give clearance to aircraft. Reboot different equipment	radar, ANFPN 503V	n/a	n/a	
170	75	TRENTON	F	38	L	Sgt	21	radar controller	control aircraft on final approach.	control aircraft on final approach			
170	76	TRENTON	M	45	R	WO	27	Office work					
215	77	BORDEN	F	39	L	Cpl	16	Help desk analyst	answering phone, working on computer	computers, telephone	n/a	n/a	no
215	78	BORDEN	F	37	R	MCpl	15	Concern Operator	Working on a computer	van (passenger)			none
215	79	TRENTON	M	31	R	Cpl	13	Air Ground Air Operator (MACS)	HF radio	n/a	n/a	n/a	n/a
215	80	TRENTON	F	24	R	Cpl	4	Air ground air operator	Provide HF communications for aircrafts	HF			
215	81	TRENTON	M	43	R	Cpl	26	MACS Operator Air Ground Air	HF radio operator	HF radio	n/a	n/a	n/a
215	82	TRENTON	M	34	R	Cpl	15	HF radio OP	communication with aircraft. Note my work site will be down today so will be quiet	HF radio's computers telephone	nil	nil	HF white noise, bracks in squelch
215	83	TRENTON	M	39	L	Cpl	15	HF (high frequencies) radio communications	monitoring and using various high frequencies in the 3-30 MH7 board	five (5) HF air/ground/air console monitoring 18 specific channels in the above range. Most generating white noise (static) with modulation carried on an AM/VSB carrier	n/a	n/a	
215	84	TRENTON	M	38	R	Cpl	15	MACS Trenton - radio/talk to different aircraft	to mad radio equipment	HF radios	none	none	yes - radio frequencies noise
215	85	TRENTON	M	43	R	MCpl	22	Air ground air	AF communications, shift supervisor	communications consoles	nil	nil	no (communication site down)
215	86	TRENTON	M	35	R	Cpl	16	radio op	listen & talk on the radios	HF radio receivers	none	none	no rest periods
215	87	TRENTON	M	39	R	Cpl	20	radio op	HF radio	HF radio equip	nil, civilian	no	no rest periods
215	88	TRENTON	M	40	R	Sgt	22	radio operator	ansering radio traffice with A/C	HF equipment	nil	nil	no

21A	89	PETAWAWA	M	24	R	2LT	6	Armd Troop Leader	Command 4 tanks in the field for a live fire combat team exercise	C2 Leopard tank	C2 Leopard tank; M113 APC	C6 7.62mm machine gun	tank engine noise
21A	90	PETAWAWA	M	22	R	2LT	5	Tank troop leader / crew commander	Command tank troop via radio engage targets with 105mm and 2.62mm		Leopard C2 MBT	105mm L7A3 tank gun; 7.62mm C6 MG	engine sounds
21A	91	PETAWAWA	M	22	R	2Lt	5	Crew / commander / troop leader			tanks	coax / 105 mm main gun	yes, tank engine, firing of coax and 105 mm
226	92	TRENTON	M		R	Cpl	22	MACS Tech	repair & maintain MACS Equipment	n/a (very little power tool use)	suburban	n/a	no
226	93	TRENTON	M	38	R	MCpl	16	Nav aids supervisor	In charge of personnel and maintenance of navigation and landing aids	No. Precision approach radar (1000Hz fans). NavCon Check Aircraft (Dash 8)	crew cabs	no	no
226	94	BORDEN	F	37	R	Cpl	7	Network Specialist	0900 - meeting; 1330 - T-150; 1430 - shop (server side)				
226	95	BORDEN	M	33	R	Cpl	14	Computer maintenance	Shop maintenance	computers			
226	96	TRENTON	M	44	R	Sgt	25	Communications Services Supervisor	Office work supervise installation and main of telephone / fax / radio etc.	computers, radio	forklift truck	n/a	no
226	97	TRENTON	M	52	R	Cpl	19	Repair & maintenance air field equipment	Repair maintenance. ASR, SSR, ILS, TACAN and PAR as well as ACC tower radio frequencies	Replace magatron in PAR. Work with RM at ASR most of day	Ford crew cab & GMC 4x4 crew cab		
226	98	TRENTON	M	43	R	Cpl	24	Radar Maintenance	Work at precision approach radar (noisy) and area surveillance radar (very noise)	n/a	4 door crew cab pick-up	n/a	n/a
226	99	TRENTON	M	37	R	MCpl	15	Airfield maintenance	Equipment maintenance & repair. IFRCC equipment room.	n/a	4x4 crew cab	n/a	no
226	100	TRENTON	M	36	R	Cpl	4	LAN services	Maintain and support server rooms and customer service calls		CIV pattern vehicle	n/a	
227	101	BORDEN	M	57	R	Cpl	32	Repair electrical & electronics equipment	Install elec connectors in alunail	Dremmel tool, files, hacksaw, air grinder, bevel grinder, hammer	nil	nil	nil
227	102	BORDEN	M	46	L	CIV	24	Electronic Technician	Installation of radio systems, light emergency bar and penetrator (siren) on range control vehicle	drills	na	na	no
227	103	BORDEN	M	38	R	Cpl	12	Electronic Technician	Installed radio in truck, siren in truck, dentist	drill	no	no	no
227	104	BORDEN	M	39	R	MCpl	16	2I/C of Electronics Shop	Paper work and some work on electronic equipment	Computer, multi meter, screwdrivers, wrenches	LSVW, Van	none	none

22A	105	PETAWAWA	M	26	R	Captain	8	Gun Position Officer	Senior Technical Gunnery Officer of D Bty		1		Vehicle noises
22A	106	PETAWAWA	M	24	R	OC2T??	4	TCA	Supervise Gunline. OJT for Recce		M-113		Standing near guns
23	107	PETAWAWA	M	37	L	Lt	10	PI Comd	Comd 34 soldiers during trg & operations	N/A	HLVW	C7 blank rounds, artillery simulators, grenade simulators	machinery driving by work place
23	108	PETAWAWA	M	28	R	Lt	3	Platoon Commander	Command & Control, yelling over loud noises	C7 rifle with blanks, pyrotechnics	MLVW	C7 rifle	Simulated artillery burts, simulated grenades, C7 rifle blanks, C9 light machine gun blanks (open & enclosed spaces)
23	109	PETAWAWA	M	34	R	Lt	15	Office work, computer	administer	computers, phone	n/a	n/a	no
23	110	PETAWAWA	M	23	R	2LT	5	Infantry Platoon Commander	Administration of PI	nil	nil	nil	
23	111	PETAWAWA	M	37	L	Lt	2	PI Comd	PI Administration	n/a	personal veh	n/a	n/a
31D	112	TRENTON	M	37	R	Capt	17	office work	NFC will be given meetings	n/a		n/a	I will go and pick up my new motorcycle today
31D	113	TRENTON	F	38	R	Capt	4	DOPSO	desk duties, phones, admin, etc.	computer, phones	personal vehicle only (@lunch)	none	none
31D	114	TRENTON	M	29	R	Capt	12	Misc	Working at sqn	nil	nil	nil	no
31D	115	TRENTON	M	28	R	Capt	10	Navigator	Fly in airplane (I don't think he did toay), paperwork	computer	personal car	pen	no
31D	116	TRENTON	M	41	R	LCol	25	C130 navigator (SAR). Aircrew.	5hours flying 0915-1600	work mostly in cockpit area and some work in cargo compartment (10% of time)			
31D	117	TRENTON	M	36	R	Capt	14	Air Navigator	Nav - comms - safety man	C-130 Herc			pilot talk, other aircraft, grd power unit
32A	118	TRENTON	M	39	L	Capt	13	Pilot	Local Triper 3.5hrs ; office stuff 4hrs		A310		no
32A	119	TRENTON	M	39	R	Capt	15		office work, flying between 1445-1800; C130 Hercules				
32A	120	TRENTON	M	50	L	Capt	27	Office		computer, telephone	car	none	no

32A	121	TRENTON	M	44	R	Capt	19	Pilot	flying CC-130 in search and rescue role. Flying time today 2.8 hours AM, 2.3 hours PM = total 5.1 hours	CC-130 Hercules	CC-130		
32A	122	TRENTON	M	31	R	Capt	10	Pilot	Flying on SAR Hercules				
32A	123	TRENTON	M	41	R	Major	21	Depute Commanding officer	office work. Short flight on CH113 Lab				
32A	124	TRENTON	M	40	R	Capt	18	Hercules first officer	to aircraft to check publications to hanger to prep for flights	4 engine aircraft		none	yes. IMU fans on C-130. C-130 running on ramp. business jet starting on ramp
32A	125	TRENTON	M	42	L	Maj	23	flying	pilot	CC130 hercules	nil	nil	yes. on ramp around aircraft
32A	126	TRENTON	M	34	R	Maj	15	Labrador Flight Commander / Pilot	Admin, FOD walk on airfield, admin, flying (CH-113), lunch, admin	computer, CH113 Labrador			CH113 Labrador (flying for ???)
39	127	TRENTON	F	25	R	2LT	7	Terminal controller		radio	no	no	no
39	128	TRENTON	M	38	R	Lt	18	Term controller	safe, orderly, expeditious flow of air traffic. Shift supervisor	radar / comms equip			
39	129	TRENTON	M	23	R	2Lt	5	OJT					
39	130	TRENTON	M	36	L	Capt	18	standards officer	OSC admin		Ops 10		
39	131	TRENTON	M	34	R	Capt		Tower controller					
39	132	TRENTON	M	38	R	Capt	14	Tower controller	Control of air & ground traffic at Trenton airport		Dodge pick-up truck		
39	133	TRENTON	M	36	R	Capt	15	Chief Controller Tower	staff work, controlling	computer	1/2 ton truck		
411	134	BORDEN	M	58	R	CIV	40		repair to coolant heater re LSVW	hand tools			
411	135	BORDEN	M	30	R	Cpl	14	Replace HLVW Tranvy		air gun	HLVW	n/a	on the floor
411	136	BORDEN	M	40	L	Cpl	20	Mechanical service / maintenance		air tools, fork lifts, air impact guns	MLVW, HLVW		back-up alarms, air tools
411	137	BORDEN	F	38	R	Cpl	12		inspection of veh	air gun	civ pattern	n/a	n/a
411	138	BORDEN	M	29	L	Cpl	6	Mechanic	Inspecting civilian pattern cars / trucks changing oils and filters	impact gun, oil pumping machine, hoist	trucks, cars, 2 ton TCV	n/a	conversation, laughter
411	139	BORDEN	M	37	R	Cpl	16		Worked in Bld - 0161. At 2pm drove MLVW to Krown undercoating in Alliston				

411	140	BORDEN	M	36	R	Cpl	15	veh tech		heavy equipment, heaters, air tools, hammers, drills, air compressors, welding machine engine, fire truck engine	big diesel trucks, small engines, heavy equipment, tanks		loud engine noise
411	141	BORDEN	M	38	R	Cpl	15	Recovered vehicle	(1) Drive tow truck for approx. 2hrs. (2) Ate lunch in lunch room 1 hr (3) Attended "O" group (meeting) 1/2 hr. (4) administration in office 2 hrs	truck, winch, computer	nil	nil	yes, impact wrenches
411	142	BORDEN	M	34	R	Cpl	12			air impact, hammer drill	standard military pattern	n/a	grinder, gas powered welder, air compressor
411	143	BORDEN	M	32	R	Pte	2	Mechanical service / maintenance		air tools, fork lifts, air impact guns	MLVW, HLVW		back-up alarms, air tools
411	144	BORDEN	M	27	R	Pte	2	veh tech	maintenance of vehicles	vehicles, impact guns, pressure washer	iltis, LSVW		
42	145	TRENTON	M	29	R	Capt	11	Technical Services Officer (TSO)	Supervising ATIS 226 Techs, writing reports, attending meetings & deployment of communications BQPT	computer, telephone, vehicles	4x4 truck, passenger car	none	conversation
42	146	TRENTON	M	39	R	Capt	17	IT Services Officer	Office work	computers	aerostar van	none	luncheon from 1145 1315
421	147	BORDEN	M	56	R	CIV	38		Repair Weapons	Grinder, hammer, electric etcher			
421	148	BORDEN	M	31	R	Cpl	4	Weapons technician land environment	Inspect and repair weapons and equipment related to weapons	Hand Tool	Shop van.	none	none
421	149	BORDEN	M	32	R	Cpl	14	Weapons Technician	Repair small arms machine guns, armoured vehicles. Hammering metal and work	drill press, varasol bath	LAV II	none	no
434	150	BORDEN	M	26	R	Cpl	6	Electronic, optics	Generators, power tools	Sirens, drills, grinder	LSVW	none	none
441	151	BORDEN	M	46	R	CIV	25	Welding shop	hammering, welding, grinding, cutting and using machinery	welder, grinders, torches, sawa, hammers etc.	1 ton welding truck		
441	152	BORDEN	F	48	R	CIV	10	Upholstering	Repair vehicle seats, tents, etc	sewing machines			
441	153	BORDEN	M	38	R	CIV	18	Welder / Fabricator	weld and fabricate	welder, chipping hammer, grinders, drills, shears, sanders	APC, welding truck, Ford super duty Diesel	nil	

441	154	BORDEN	M	37	both	Cpl	18	Welding and fitting, fabricating	welding, grinding	welding machine, grinders	plows, graders, military pattern vehicles	nil	nil
514	155	BORDEN	M	52	R	Sgt	35	AVS GHOP - ALSE shop - A/C supply - tool crib	Supervisor, meeting, hanger floor,P190	computer	Drive to Alliston & back 0800-0845. Drive to lunch & back 1200-1300	n/a	noise from jack hammer aprox 10:00
514	156	TRENTON	F	36	R	Cpl	7	Landing gear		Rhine aire for venting fuel tanks	n/a	n/a	not especially
514	157	TRENTON	M	34	R	Cpl	13	Labrador Maintenance	Cleaning, inspecting, surveying, repairs	metal riveting, vacuum cleaner	none	none	metal riveting
514	158	TRENTON	M	33	R	Cpl	15	aircraft servicing	clerical	nil	truck & mules	no	no
514	159	TRENTON	M	35	R	Cpl	15		Planners desk on hanger floor			no	
514	160	TRENTON	F	40	L	MCpl	21	NOC	Class B room cleaning	autiasonic machine	nil	nil	no
514	161	TRENTON	M	22	R	Pte	2	paper work, fuel tanks		rhine air			yes. The rhine air carts were running
514	162	TRENTON	M	25	L	Pte	2	air craft servicing		nil	trucks AC	n/a	
514	163	TRENTON	M	44	R	Sgt	20	NCO 1/2 vibration analysis	office work, scheduling		4x4 truck	n/a	
526	164	BORDEN	M	48	R	MCpl	25	TR supervisor, snags crew maint flight	servicing and snags (AK repair)		LSV for towing		no
526	165	BORDEN	M	23	R	Pte	1	Working on the Griffen, 600 hrs inspection	Taking off bolts on the rotor blade, checking them and putting them back on with cutter pins	nil	nil	nil	yes. 10:00 buzzer
526	166	TRENTON	M	41	L	Cpl	16	Avionics Installation Technician	Avionics Design: Worked on computer all day	computer	personal	n/a	no
526	167	TRENTON	M	40	R	Cpl	21	Avionics Technician	paper work, light assembly	ventilation fans, air compressor	PMC	N/A	
526	168	TRENTON	M	32	R	Cpl	12	Avionics Manufacture	Drawing verification	none	none	none	no
526	169	TRENTON	M	34	R	Cpl	16	Lab room maint.	survey	rivet gun, handdrill test stand	pick up	n/a	
526	170	TRENTON	M	42	R	Cpl	17		ventilation system				

526	171	TRENTON	M	39	R	Cpl	15	soldering / assembly		soldering iron	none	none	no
526	172	TRENTON	M	40	R	Cpl	21	Servicing A/C	Snags on A/C	Ground serving equip (S&S Hobarts). A&R start carts	D14's & other mules. Truck for bird nest check		
526	173	TRENTON	M	26	L	Pte	2	Administration	General paper work & admin	computer			air cart
526	174	TRENTON	M	31	L	Pte	3	Avionics Technician	Perform maintenance duties on CC-130 Hercules	Power cords (Hobart, Steward - Steveson)	crew truck, mule	n/a	no
565	175	TRENTON	F	35	R	Pte	2	metal tech	riveting, stripper, drilling, sanding filing				
565	176	TRENTON	M	36	R	Cpl	15	ACS Tech	Front desk	drills, sander			few
565	177	TRENTON	M	31	R	Cpl	8	Metal Tech	Metal Fabrication	drill, drill press, grinder, riveting, media blast	n/a	n/a	n/a
565	178	TRENTON	M	32	R	Cpl	7	metal working	bang metal	drills, grinders, rivet, cutting wheel			
565	179	TRENTON	M	32	R	Cpl	12	Aircraft structures technician	shop repair or aircraft components	grinder, drills, hydraulic press, rivet guns, metal shear	1/2 ton truck	none	
565	180	TRENTON	M	45	R	MCpl	29	Reston (work) welding shop	welder metal shop	grinders, cut off saws, shears, drills	PU	n/a	
565	181	TRENTON	M	37	R	Cpl	17	ACS Tech	Machine shop duties	mill, lathe	n/a	n/a	no
565	182	TRENTON	M	39	R	Cpl	9	machining		tool / cutter grinder		n/a	machine shop noises
565	183	TRENTON	M	39	R	Cpl	18	metals tech	riveting, stiipfett punch, drilling, sanding				
565	184	TRENTON	M	37	R	Cpl	12	ACS Tech, machine operator		milling machine	n/a	n/a	no
651	185	BORDEN	M	49	R	CIV	25	Fire fighter	Varied. Truck inventory checks. Extinguisher maintenance. Alarm test. Fire call - cleaning water break clean up	Varied. Extinguisher recharge machine. Compressor start up (for refilling air bottles)	rescue van		no
651	186	BORDEN	M	51	R	FR1	28	Fire fighter		Extinguisher refill & extractors. Equipment run-ups, checking SCBA monitors	emergency vehicles		
651	187	BORDEN	M	43	R	FR1	17	Fire fighter	responding to emergencies, shoveling snow, stand-by	APU diesel engine	pumpers - rescue van	nil	siren air horn vacuum
651	188	BORDEN	M	41		FR1	2		Dispatcher	no	no	no	no

651	189	BORDEN	M	42	R	FR2	25	Platoon Chief	alarm testing inspections, equipment run ups, training, respond to emergencies. Lots of computer work	trucks, hand tools, saws, hydraulics, pumps, power trucks	fire trucks		yes, fire trucks
651	190	BORDEN	M	53	R	FR2	4	Inspector	Plan review, meetings, respiratory protection trg	computer, fit test machine pwrtocount, projector, staff car	staff car	nil	
651	191	BORDEN	M	39	R	FR4/FR5	21	Platoon Chief / Acting Deputy Chief	Supervise a crew of 7 personnel for fire fighting duties.	Exercise Equipment (cycle, treadmill)	pumper, van		vehicles
711	192	PETAWAWA	M	25	R	Cpl	6	OPS NCO	Office work	Computer, TV	nil	nil	nil
711	193	BORDEN	M	43	R	WO		HWO	Patient Care. Moving office stuff.	nil	nil	nil	nil
737	194	BORDEN	F	30	R	Pte	4	medical adm		computer	personal veh	n/a	n/a
737	195	PETAWAWA	M	44	R	Cpl	4	Med Tech CQ/IC	Replenish med supplies, stock ambulances, check all medical equipment		LSVW box ambulance		vehicle noise
737	196	PETAWAWA	M	30	R	Cpl	8	Det Mbr	Det equipment checks. Pers equipment checks.	nil	PMOV, SMP	nil	Music
737	197	PETAWAWA	M	37	R	Cpl	16	Medical Technician	Unit medical station, screening patients, pharmacy	walking through maintenance bay while a HLVW was running	none	none	no
737	198	PETAWAWA	M	34	R	Cpl	11	Medical technition - pharmacy dept	Pharmacy dispensing, patient evaluation	Dental drill (I had a fractured molar, let side) approx 30+ min	LSVW Ambulance (no siren used)	n/a	music in car between work station and home
737	199	PETAWAWA	M	32	L	Pte	4	Det Mbr	Medical Det stores, vehicle maintenance	ladder, trolley, computer	none	none	vehicle's horn's and engines. (Illtis, LSVE, MLVW)
737	200	PETAWAWA	M	23	R	Pte	4	Working on vehicles and cleaning company up	Work on vehicles and cleaning kit	none	LSVW	no	no
737	201	BORDEN	M	40	L	Cpl	18	Ward Master	Housekeeping	BP, ECG, computer, personnel, telephones, room call buttons, CA	POMV	n/a	
737	202	BORDEN	F	35	R	Cpl	15	Med Tech	Screen patients in treatment room	0	0	0	0
737	203	BORDEN	F	38	R	MCpl	15	Screening patients in med clinic	Screening patients in med clinic	0	personal veh	0	
737	204	BORDEN	F	30		Pte	2	Med-Tech	Reception	n/a	n/a	n/a	
737	205	BORDEN	F	31	R	Pte	3	Screening patients		0	0	0	0

83	206	TRENTON	M	39	R	Capt	20	Engineering & maintenance officer at ATESS	much time reading & writing at computer. Physical training. Meeting		only personal		
83	207	TRENTON	M	41	R	Capt	22	office worker	PC workstation	POMV (mini van)	nil		
83	208	TRENTON	M	53	R	Capt	53	ATESS, CCISF Deputy FLT COMD	administrative (office work)	computer, phone	n/a	n/a	radio playing, 3 printers, not very loud
83	209	TRENTON	M	29	R	Capt	12	Technical Services Officer (TSO)	staff work				
861	210	BORDEN	F	52	R	CIV	3	Serving line			0	0	0
861	211	BORDEN	M	27	R	CIV	10	Dish room	Lunch - Scraped plates. Dinner - Loaded plates	dish machine			nothing
861	212	BORDEN	F	25	R	CIV	2	Cashier	Working on cash, general cleaning, tables, floors ect	n/a	n/a	n/a	no
861	213	BORDEN	M	39	R	CIV	20		Cooking roast veal and other non noisy job	oven			yes Earl
861	214	BORDEN	M	22	both	CIV	1	pot person	Wash pots, change milk, juice and pop	paring knife, steel wool scrubbies	n/a	n/a	pot room, dish room
861	215	BORDEN	F	23	R	CIV	5	Cook	Cook food as directed. Served the line	n/a	n/a	n/a	n/a
861	216	BORDEN	F	35	R	CIV	2	Sandwich bar / cashier		dish machine			
861	217	BORDEN	F	34	R	Cpl	14	I/C shift, cook	Cook in charge of shift workers, looking kitchen and dining room	Stoves, steamers & bombers (kettles)	n/a	n/a	n/a
861	218	BORDEN	M	38	R	LS	38	Cook	Cook, clean, prep, I/C shift	Steamer, grills, ovens	no	no	kitchen, galley, dish room
911	219	BORDEN	M	47	L	CIV	10	Store Person	Receiving material, storing material, POL, unloading 3 ton truck	computer, forklift	pick-up truck		
911	220	BORDEN	M	47	R	CIV	25	Storeman / Driver	Delivering military supplies and equipment. Forklift operation	pallet mover, forklift	3 ton stake truck, pick-up van	n/a	
911	221	BORDEN	M	53	L	CIV	32		Truck Forklift	forklift	nil	nil	nil
911	222	BORDEN	M	57	R	CIV	15	Stores Person	Repair & disposal section of warehouse			n/a	truck beepers
911	223	BORDEN	M	44	R	CIV	22	Packaging Specialist	Package military supplies	computer, hand truck	nil	nil	
911	224	BORDEN	M	49		Cpl	27	Office Clerk	Demand, receipts, issues, POL	Forklifts	pick up truck		
911	225	BORDEN	F	35	R	Spt	1	Issue Stock			none	none	
921	226	BORDEN	F	42	R	CIV	14	Office	Computer work				
921	227	BORDEN	M	50	R	CIV	21	Move material, drive fork lift, truck			7 ton ford diesel truck	nil	

921	228	BORDEN	M	52	R	CIV	19				Pick up, fork lift (gas & elec), paint booth		
921	229	BORDEN	M	38	R	Cpl	16	Data Clerk	Office	none		none	
933	230	BORDEN	M	37	R	MCpl	14	Warehouse Supervisor	Loading and off loading trucks		Forklift	n/a	no
933	231	TRENTON	M	36	R	Cpl	15	FIT Programming	FIT Programming	computer, radio	personal car	no	no
933	232	TRENTON	M	36	R	Cpl	15	shipper	load trucks	fork lift	Forklift	nil	no
933	233	TRENTON	M	39	R	MCpl	21	load master instructor		computer	van (passenger)	nil	nil
933	234	TRENTON	M	42	L	MCpl	20	load master		C-130	none	none	
933	235	TRENTON	M	42	L	Sgt	20	load master	fly on CC-130	nil	nil	nil	no
933	236	TRENTON	M	42	R	Sgt	25	Training & Standards	mostly computer work	no	no	nil	no
933	237	TRENTON	M	46	R	WO	28	Administration all day		computer	van	n/a	no
933	238	TRENTON	M	42	L	Sgt	20	CC-130	flying duties 5.1 hrs total flying time 0910-1205 and 1335-1600		CC-130		yes CC130 noise
935	239	PETAWAWA	M	40	R	Cpl	16	Driving oil changes climbing up and down vehicles		none	no	no	yes, door shutting vehicles starting
935	240	PETAWAWA	M	36	R	Cpl	14	DVR	50 Points checks, mail run, vehicle maintenance		MLVW, HLVW, LSVW	nil	
935	241	BORDEN	M	54	R	CIV	2	Operating Excavator	Demolition of rad and gun club building T87	excavator	n/a	n/a	
935	242	BORDEN	M	55	L	CIV	5	Vehicle Cleaning???	wash vehicles, clean garbage??	high pressure	drive car	n/a	canteen
935	243	BORDEN	M	44	R	CIV	9	Heavy Equipment Operator	sonic??	snow blower & grader	blower & grader	n/a	unknown
935	244	BORDEN	M	51	L	CIV	25	Heavy Equipment Operator	Operating different types of H/E such as loader, dump truck, dozer. Was using the sander all day	Front loader / black ho., helicopter etc.	0	0	
935	245	BORDEN	M	33	R	Cpl	8	Sanding / plowing		sander / plow / loader	n/a	n/a	n/a
935	246	BORDEN	M	36	R	Cpl	18	Washrack attendant	To maintain washrack facilities (pressure wands, pumps)	pressure washer wands and pumps			
935	247	BORDEN	M	44	R	MCpl	25	Crew chief	on site supervisor	all	n/a	n/a	no

935	248	BORDEN	F	36	R	Cpl	17	Operator	Put in paperwork, dump truck, loader	dump trucks, loader		nil	no
935	249	BORDEN	F	36	R	Cpl	18	Heavy Equipment Dispatcher	Being on the garage floor with the mechanics	computer	none	none	no
935	250	BORDEN	M	47	R	Cpl	23	Heavy Equipment Operator	Plowing from 0900t to 1330. Sanding plowing from 1415 to 1515	in AM sledge hammer	none	none	no
935	251	TRENTON	M	39	R	Cpl	20	drive truck, haul dirt		dump truck	dump truck	nil	engine noise, train
935	252	TRENTON	M	24	R	Cpl	3	Heavy Equipment		back hoe			yes - talking
935	253	TRENTON	M	34	R	Cpl	15	dozer, crane, loader	level dirt at museum	loader & dump truck	nil	nil	no
935	254	TRENTON	F	36	R	Cpl	18	heavy equipment operator	operator heavy equipment		dump truck, formost (4x4 crane), crane		yes - talking
935	255	TRENTON	M	37	R	Cpl	17	tractor trl operator		driving T/T tone	nil	nil	
935	256	TRENTON	M	33	R	Cpl	14	refueling	top-up the phones	drive a truck	bowser	no	phone, the engine to trailer and the phone
935	257	TRENTON	M	20	R	Pte	2	refueler	refueler planes, paper work, top-up and OT trucks	n/a	fuel bowser, commercial full sized truck	n/a	yes, I stood beside the engine when refueling a plane for about 20min
935	258	TRENTON	M	26	L	Pte	1	Driver (tank)	OJT or Tracs bus & crash ambulance	mini bus (20 p&x), ambulance (field)	same as above	n/a	no

APPENDIX I:
Ordered Graphs

Appendix I:
Ordered Graphs

This appendix includes graphs of the MOC means ordered from the highest to the lowest for the following measurements:

- Peak
- Maximum Level
- Dosimeter 1
  - Average Sound Level
  - Time Weighted Average
  - Dose
  - Projected 8-Hour Dose
  - Upper Limit Time
- Dosimeter 2
  - Average Sound Level
  - Time Weighted Average
  - Dose
  - Projected 8-Hour Dose
  - Upper Limit Time
- Dosimeter 3
  - Average Sound Level
  - Time Weighted Average
  - Dose
  - Projected 8-Hour Dose

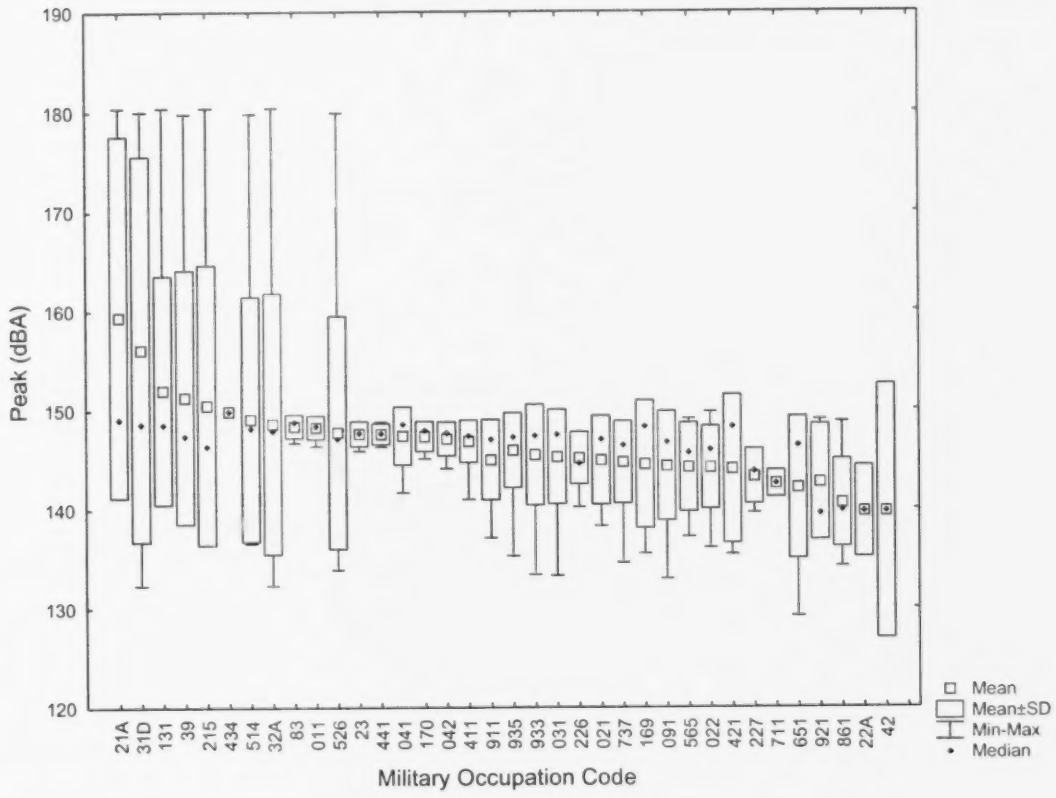

Figure I-1: Peak (Highest Instantaneous Sound Pressure) - Ordered

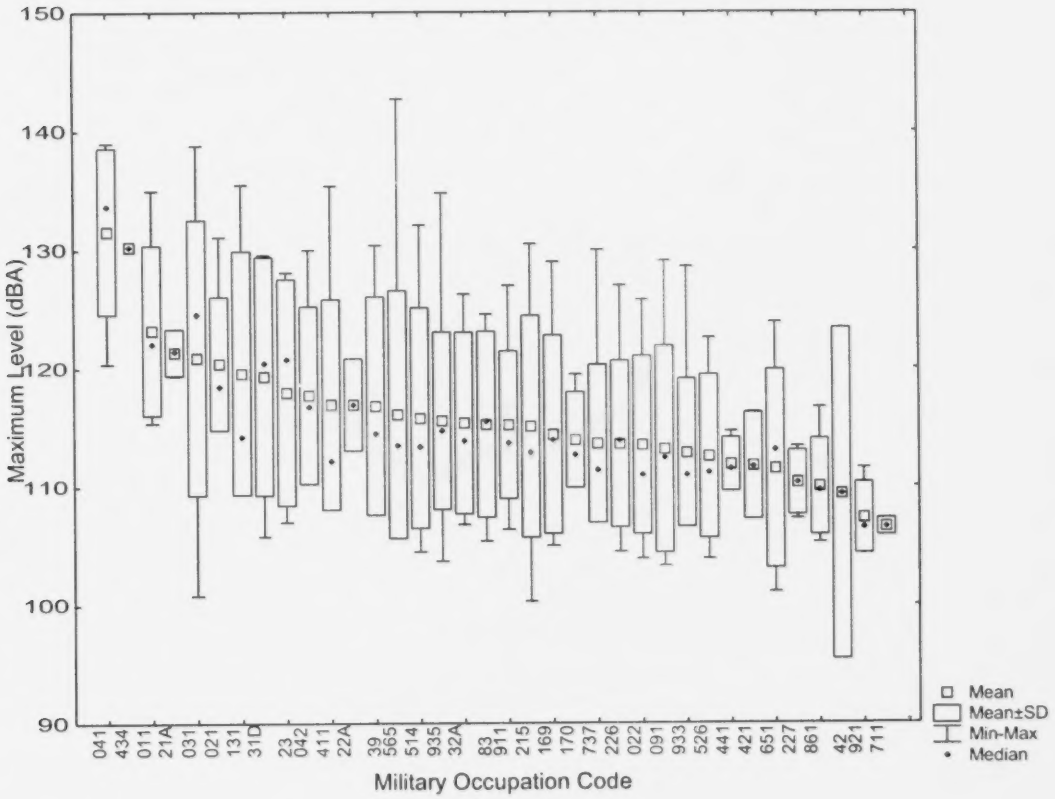

Figure I-2: Maximum Sound Level - Ordered

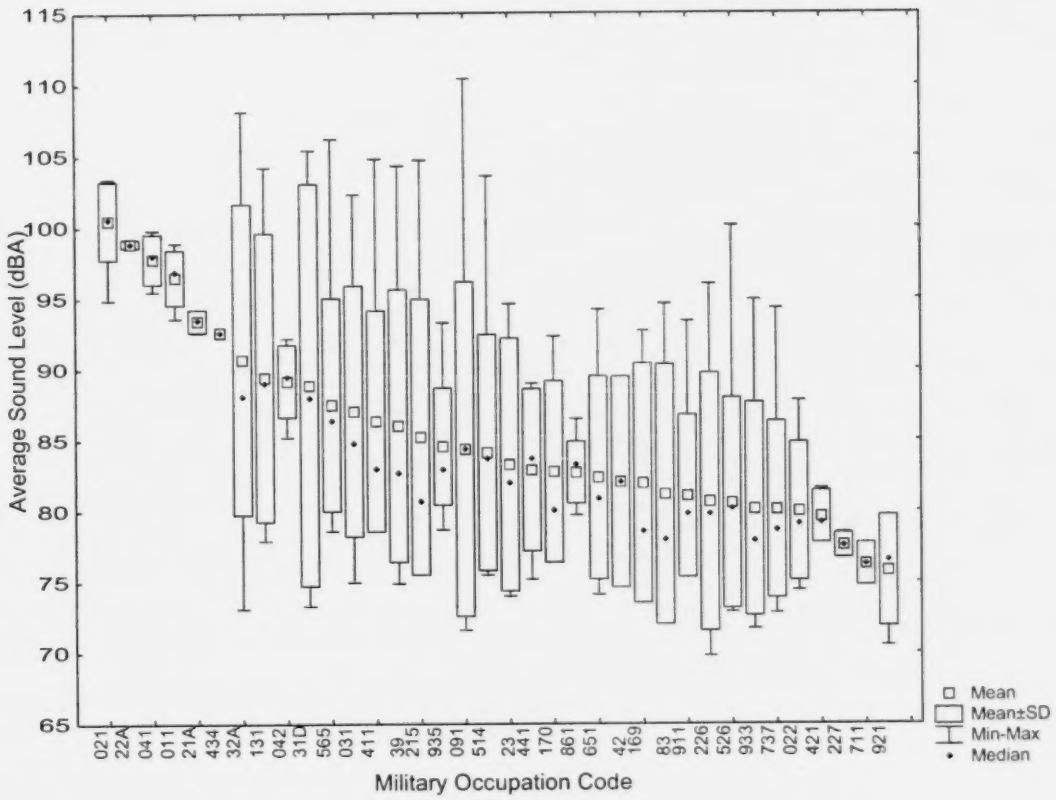

Figure I-3: Dosimeter One – Average Sound Level - Ordered

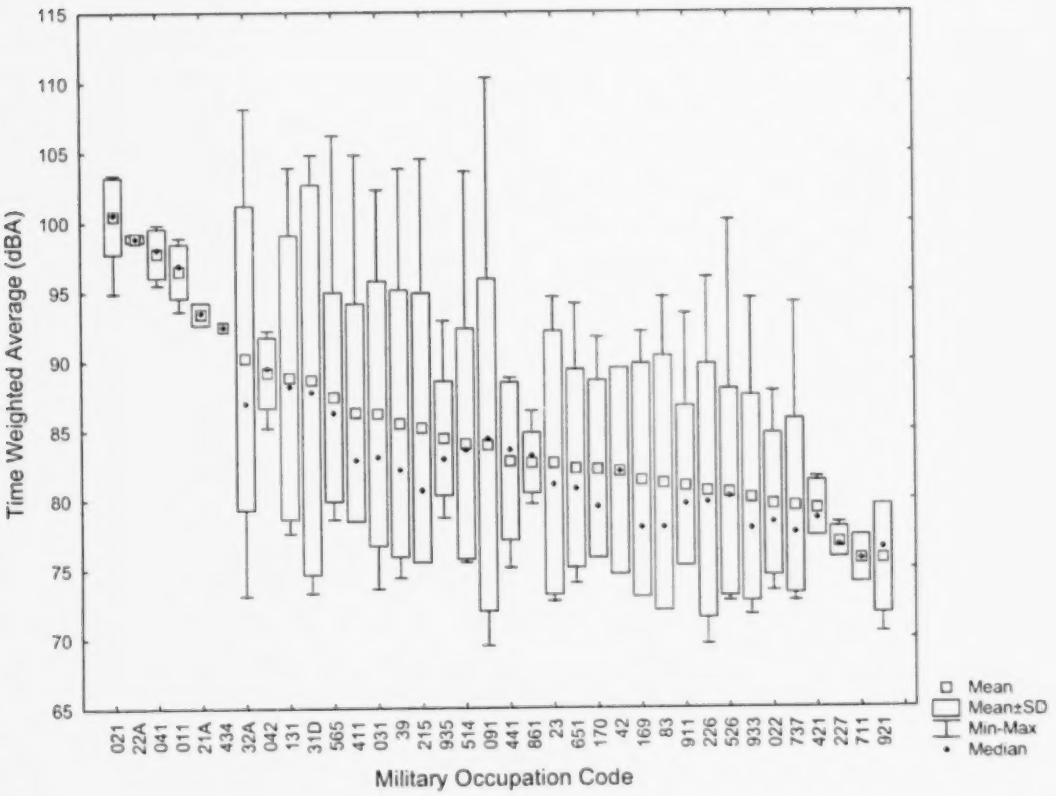

Figure I-4: Dosimeter One – Time Weighted Average - Ordered

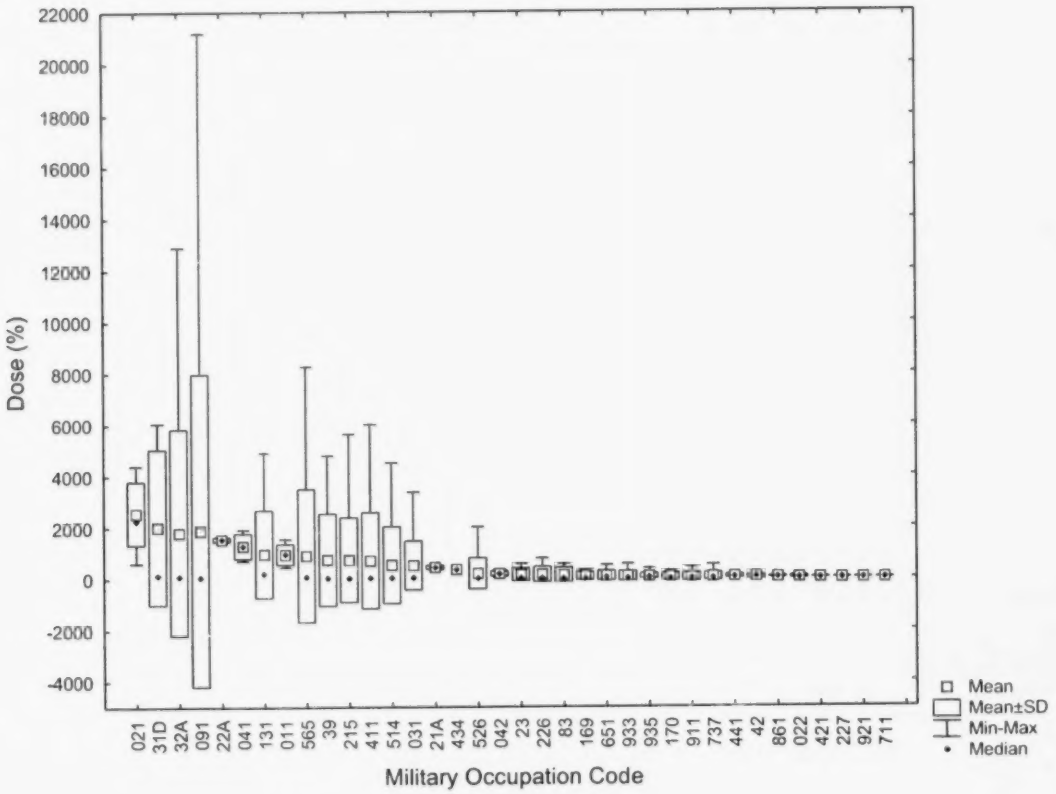

Figure I-5: Dosimeter One – Dose - Ordered

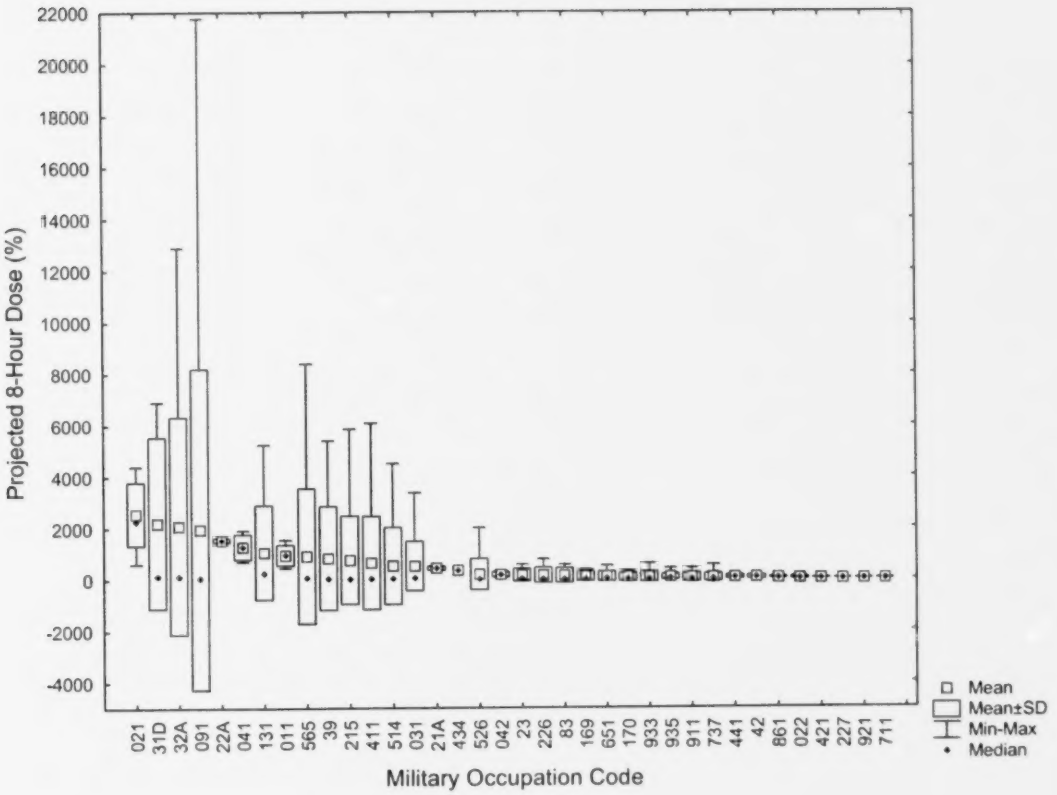

Figure I-6: Dosimeter One - Projected 8-Hour Dose - Ordered

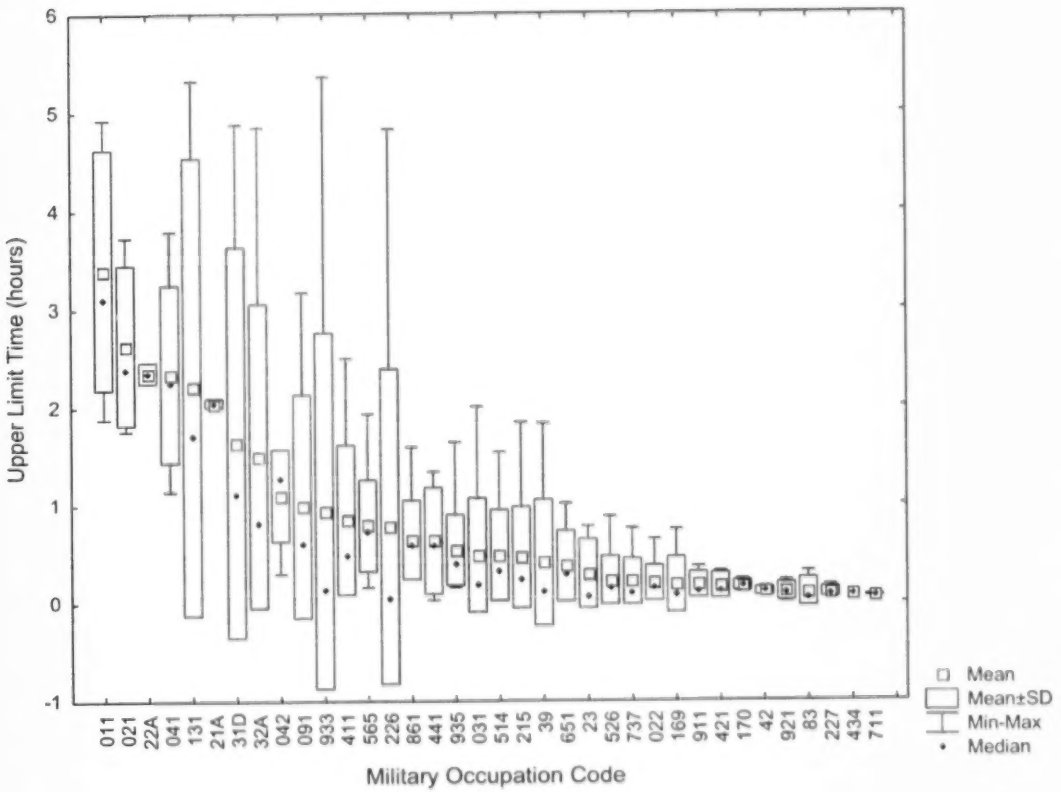

Figure I-7: Dosimeter One - Upper Limit Time - Ordered

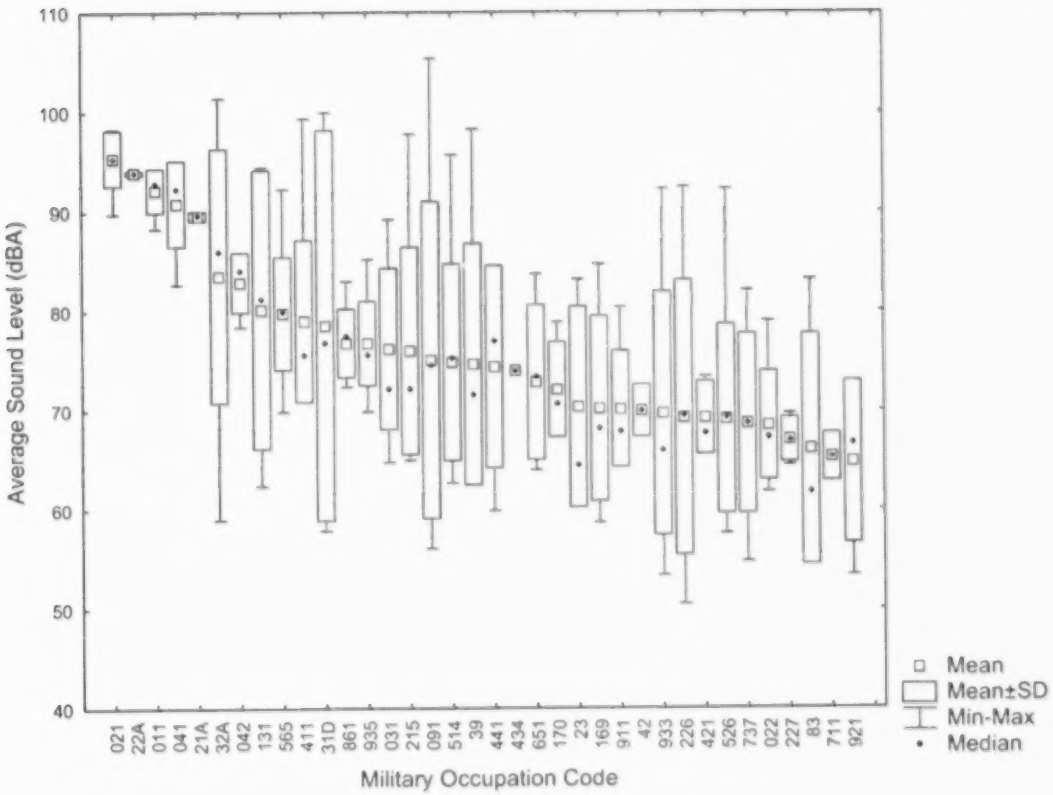

Figure I-8: Dosimeter Two – Average Sound Level - Ordered

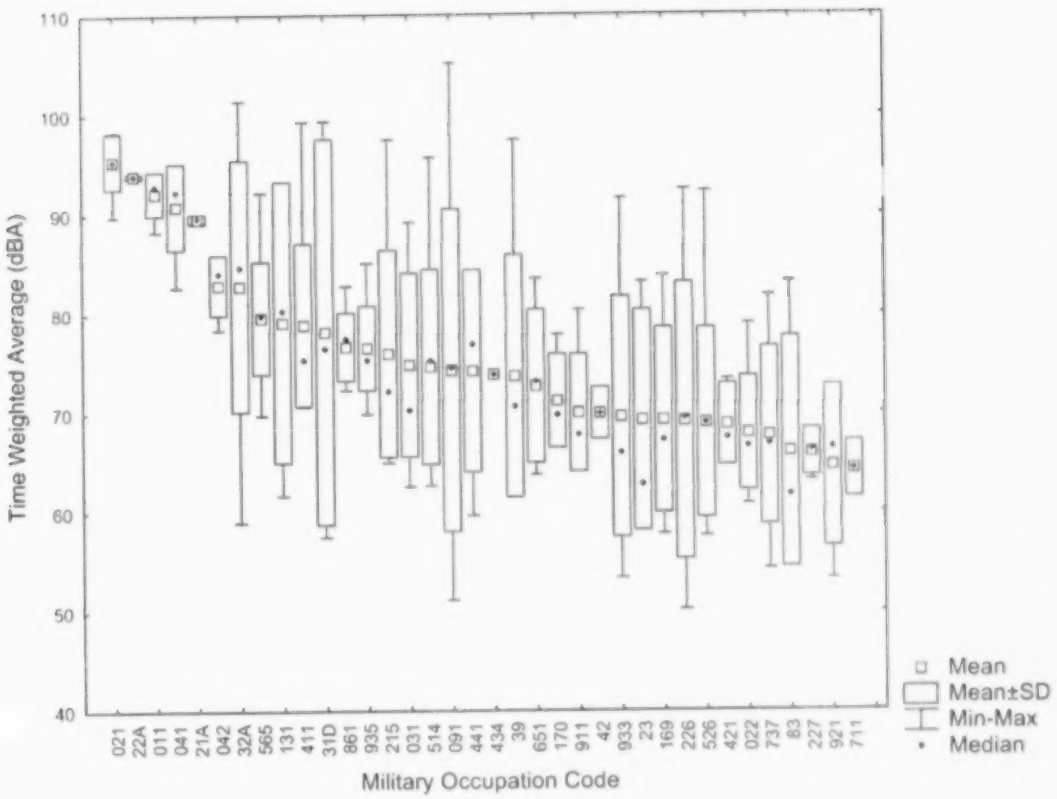

Figure I-9: Dosimeter Two – Time Weighted Average - Ordered

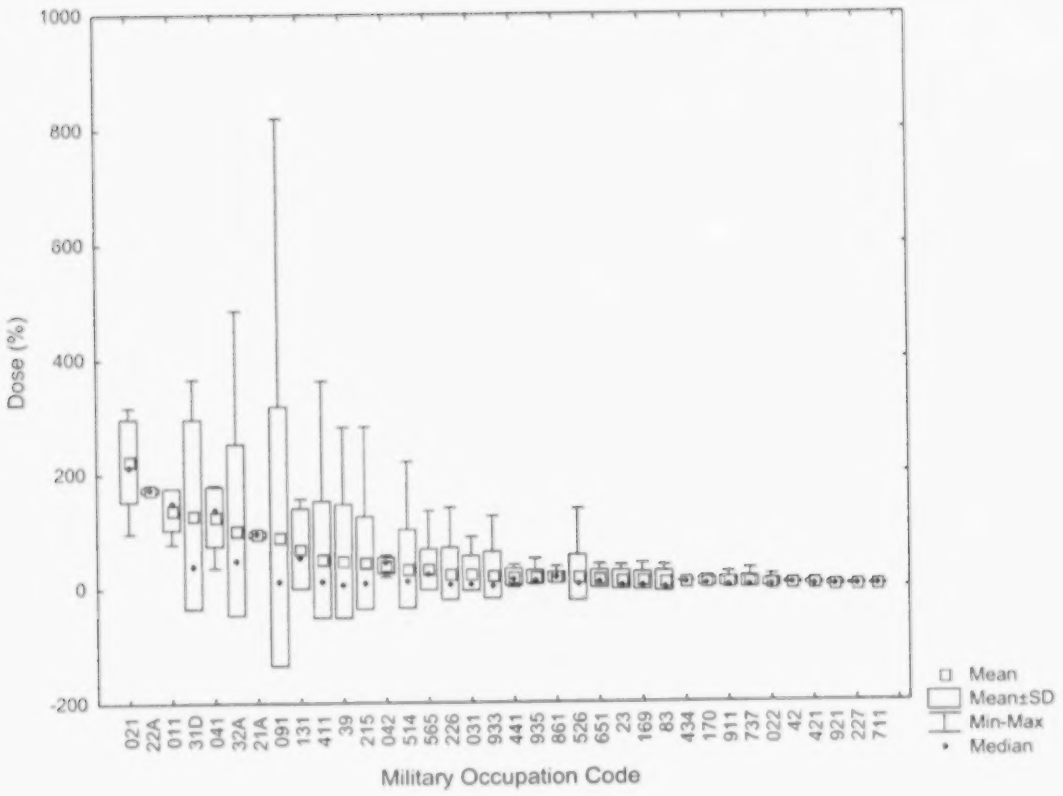

Figure I-10: Dosimeter Two – Dose - Ordered

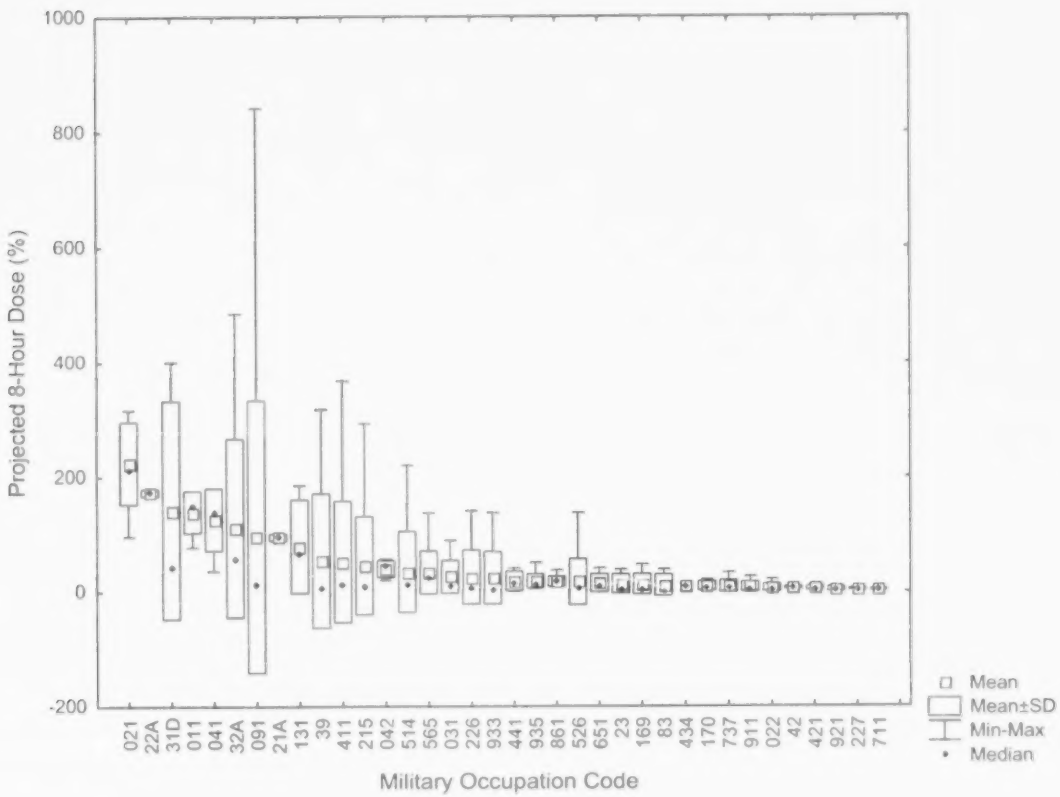

Figure I-11: Dosimeter Two – Projected 8-Hour Dose - Ordered

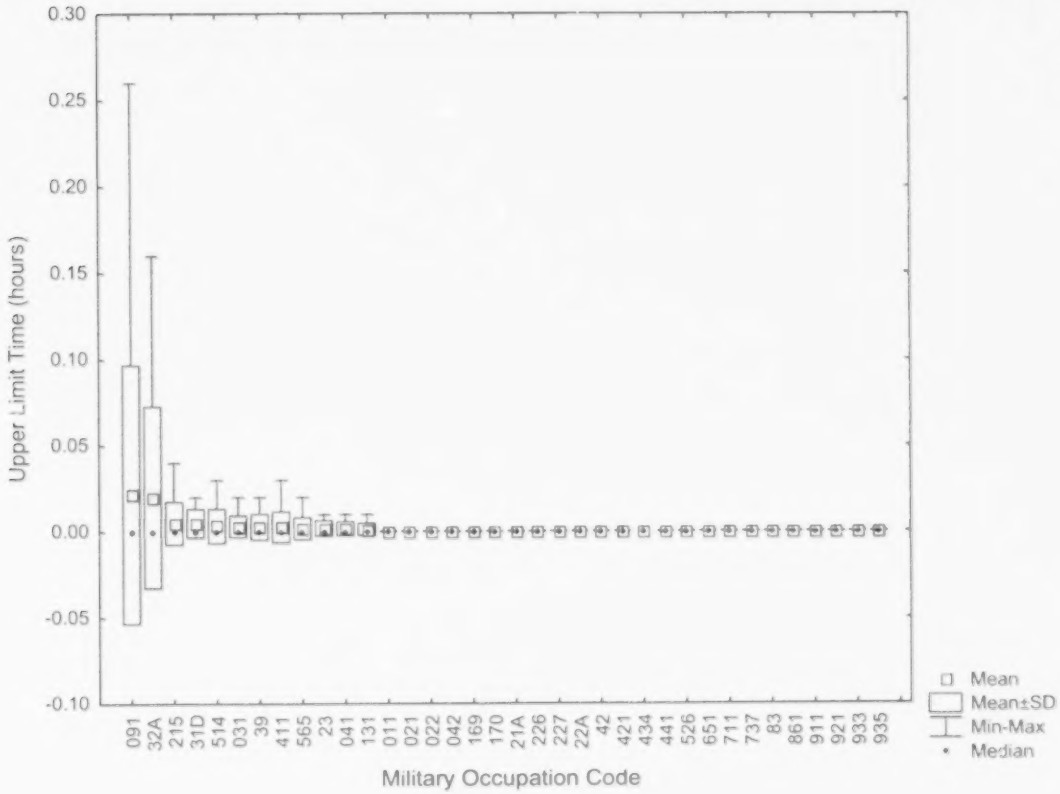

Figure I-12: Dosimeter Two – Upper Limit Time - Ordered

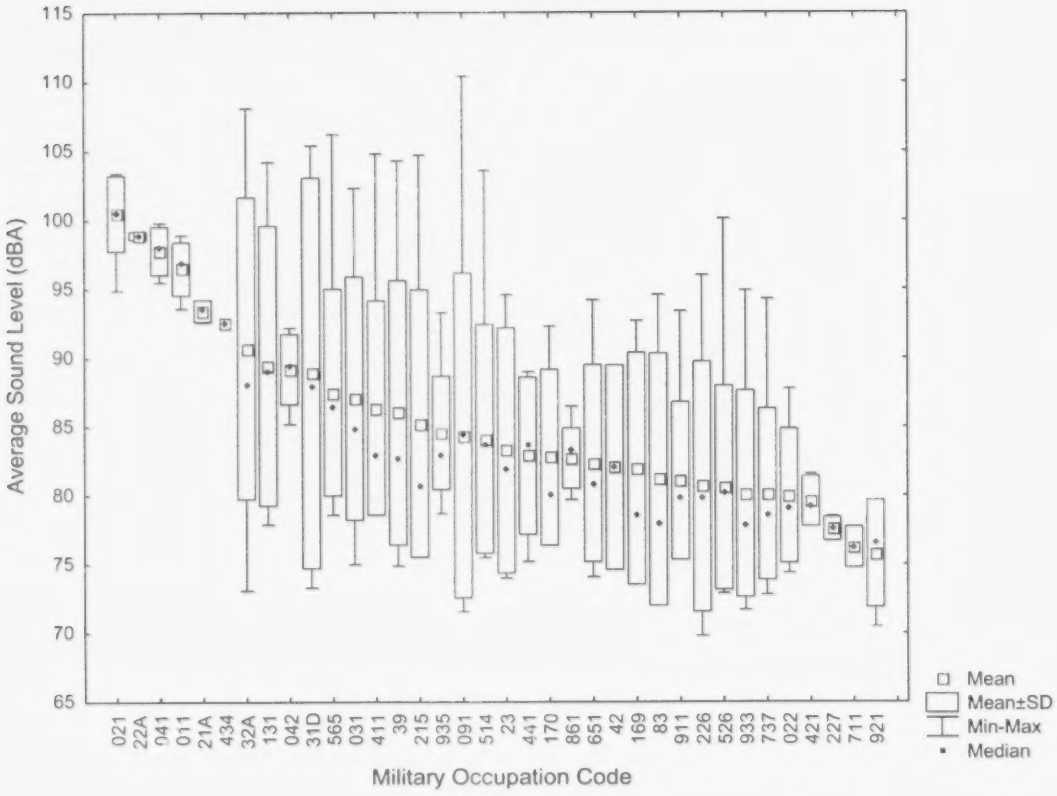

Figure I-13: Dosimeter Three - Average Sound Level - Ordered

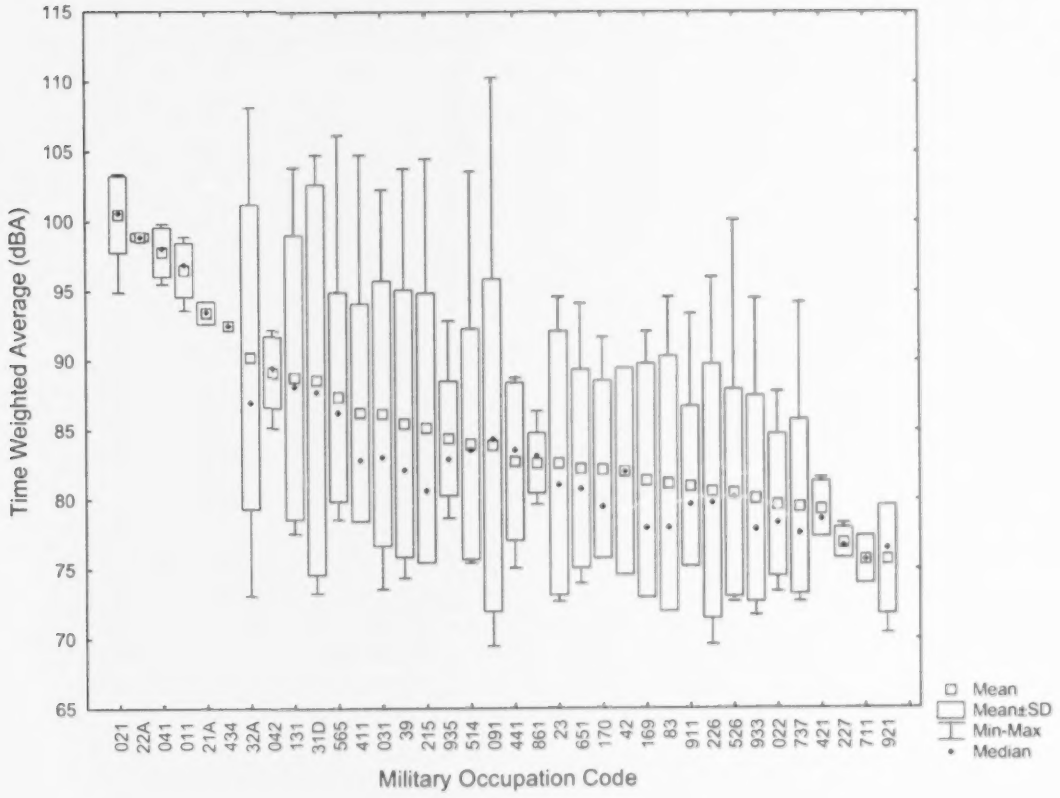

Figure I-14: Dosimeter Three - Time Weighted Average - Ordered

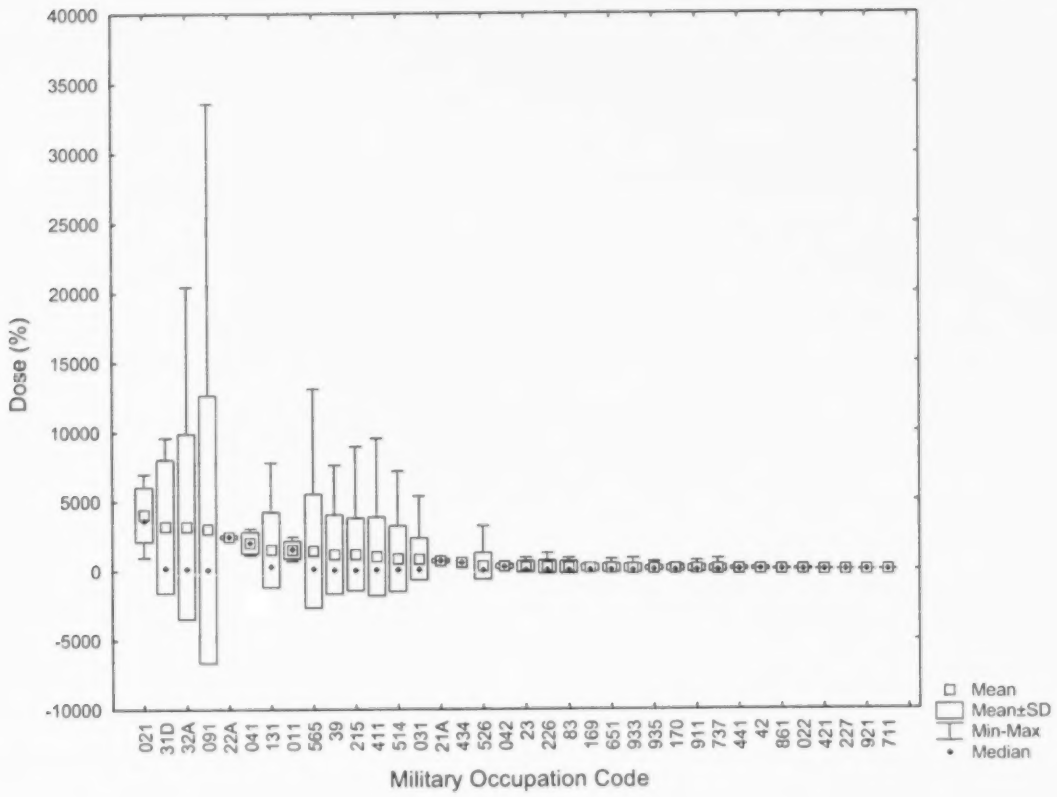

Figure I-15: Dosimeter Three – Dose - Ordered

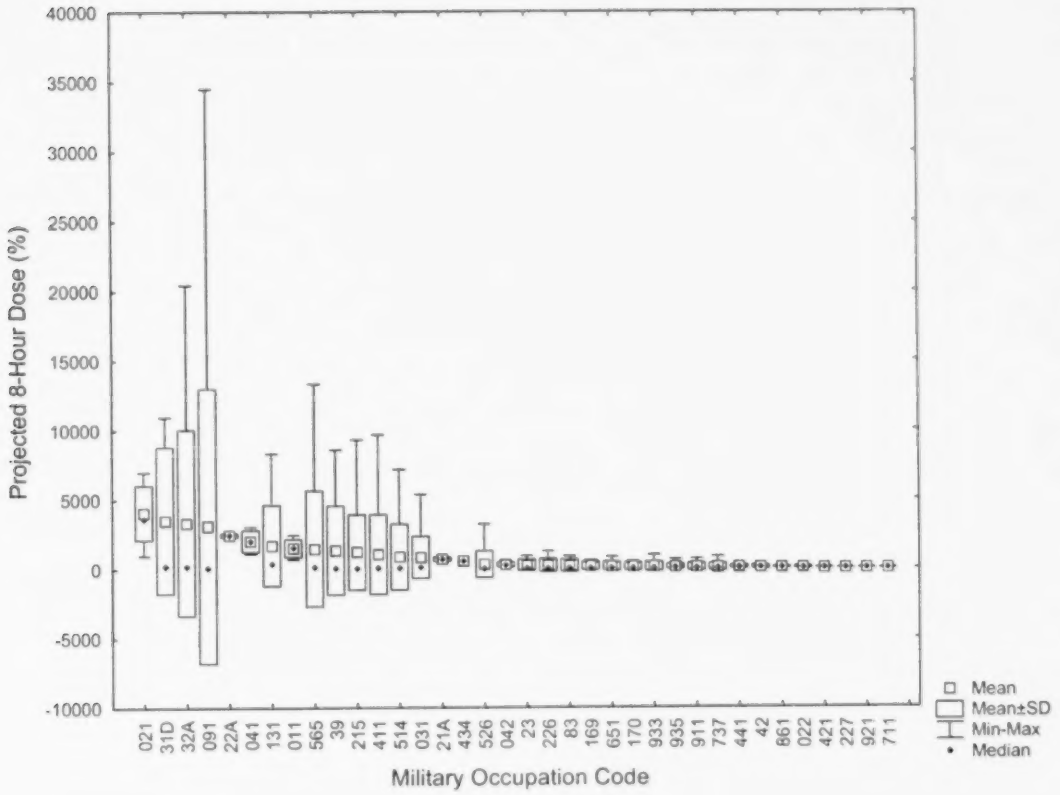

Figure I-16: Dosimeter Three - Projected 8-Hour Dose - Ordered